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Recommended reading list of literary fiction on development

NB/ All books are English-language or translations. Different and other language editions of these works may exist.

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Appeals founded on generalisations and statistics require a sympathy ready-made, a moral sentiment already in activity; but a picture of human life such as a great artist can give, surprises even the trivial and the selfish into that attention to what is apart from themselves, which may be called the raw material of moral sentiment.[24]

[24] Cited in Gill (1970: 10).

or else they are written in a more engaging and accessible manner.[22] Furthermore, partly for this latter reason, works of literary fiction often reach a much larger and diverse audience than academic texts and may therefore be more influential than academic work in shaping public knowledge and understanding of development issues. If more people get their ideas about development from fiction than from academic writing, then surely the fiction of development itself constitutes a potentially important site for the study of development knowledge.

The challenge is therefore to understand better the relationships between different accounts and forms of representation within development writing, as well as noting the multiplicity of voices and logics. In the UK at least, the inter-disciplinary field of development studies has for the past decade and a half been struggling with two persistent dilemmas. The first is the "impasse" in development theory identified by David Booth (1985, 1993, 1994), while the second is the tension between theory and practice set out most vociferously by Michael Edwards (1989) in his accusation of the "irrelevance of development studies". We would like to add to this list the idea that there is perhaps also a crisis of representation in development research, which is highlighted by the power and success of the fictional accounts of development ideas and processes which we have drawn attention to in this paper. In order to properly understand and communicate notions of development, it is perhaps necessary for us to develop forms of writing that can engage with the economic and political realities and human struggles and challenges of development in ways that go beyond the conventional academic and policy forms of development writing, and much may be learnt in this regard from fictional forms of representation.

Ultimately, as Anthony Giddens (1984: 285) has pointed out, "literary style is not irrelevant to the accuracy of social descriptions", because "the social sciences draw upon the same source of description (mutual knowledge) as novelists or others who write fictional accounts of social life". Indeed, this is something that is being increasing recognised in the opposite direction, with literature studies now beginning to borrow from formal development writing, as illustrated by the literary critic Olakunle George (2000) in a recent essay comparing Mahmood Mamdani's well-known political science monograph *Citizen and Subject* (1996) with the literary writings of Nobel laureate Wole Soyinka. Taking such efforts as an example, it is clear that a richer and "truer" perspective on the experience of development is most likely to be achieved by holding the insights and imperatives of literature, social science, and policy-making in tension with each other, irrespective of which one is more "truthful". Ultimately, as Mario Vargas Llosa (1996: 320 & 330) has pointed out, although it may well be that "novels lie", it is also the case that "men do not live by truth alone; they also need lies",[23] and as such development studies can only benefit from broadening its sources of knowledge to include what we might term "the fiction of development". Indeed, it may even be an essential precondition to reviving the discipline of development studies; as George Eliot observed over 150 years ago:

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[22] While we are in this paper primarily concerned with fiction in the form of the novel, it could also be claimed that similar objective could be achieved through a greater prominence of ethnographic writing about development – a topic that would require a separate paper.

[23] We are grateful to James Dunkerley for bringing this citation – and that previously quoted by Sir Thomas More – to our attention in his inaugural lecture for the Institute for the Study of the Americas delivered at the Chancellor's Hall, Senate House, University of London, on 25 October 2004.

and "fiction" within a subject, and we argue that it is a useful one to consider. The purpose of this example is not to suggest that one 'version' of the story of garment workers has more merits than another, but instead to show potential complementarities between two types of narrative, and to illustrate the ways in which the *form* through which knowledge is presented has important implications for its readership.

4. Conclusion: development through literature

Without falling into the trap of intellectual relativism, in which all "stories" are viewed as equal and thus none can claim to be superior, we have contended that relevant fictional forms of representation can be valuably set alongside other forms of knowledge about development such as policy reports or scholarly writing, as valid contributions to our understandings of development. In this way, literary accounts can be seen – alongside other forms – as an important, accessible and useful way of understanding values and ideas in society. Many of the fictional accounts of development-related issues which exist reveal different sides to the experience of development to more formal literature, and may sometimes actually do a "better" job in conveying complex understandings of development in certain respects. While fiction may not always be "reliable" data in the sense of constituting a set of replicable or stable research findings, it may nevertheless be "valid" knowledge in that it may be seen "to reflect an external reality" (Elliot 2005: 22).

At the same time, story-telling as a narrative form and research method has long existed within the social sciences. It can come in the shape of case study material of individual experience or more broadly as ethnographic writing within anthropological texts, for example. While such narrative styles have long formed a part of the inter-disciplinary field of development studies, they have been rarely been part of the mainstream. The same is true at the level of policy, although individual narratives have found their way into policy discourses from time to time, as the "Voices of the Poor" case illustrates, or less recently, in the case of Ken Loach's "Cathy Come Home" television documentary which influenced UK social policy debates about homelessness in the UK. Yet we must distinguish here between "stories" or "narratives" as a representational form of knowledge – a long acknowledged research and presentation method in the social sciences (see Elliot 2005 for a good overview) – and "fiction" as a literary form that we argue can contribute usefully to development knowledge. While the World Bank's "Voices of the Poor" initiative offers stories as illustrations *within* a meta-narrative, a novel such as *A Fine Balance* provides a visceral, fine-grained account in which ordinary people *are* the narrative.

Works of fiction can thus offer a wide-ranging set of insights about development processes that are all too often either ignored or de-personalised within academic or policy accounts, without compromising either complexity, politics or readability in the way that academic literature is often accused of doing. It is clear that literary works sometimes have a stronger Geertzian "being there" quality than certain academic and policy works, they may cover aspects of development that are often not made explicit in conventional academic accounts,

14

the joys and difficulties of her new life, magnificently situating it within wider descriptions of the Bangladeshi migrant community in London that traces its fears, tensions, and aspirations. A particularly important element of the novel is the juxtaposition of Nazneen's life in London with that of her sister, Hasina, who has remained in Bangladesh. Through a series of letters, we see how Hasina's life becomes increasingly difficult after she leaves her violent husband, migrates from her village to Dhaka, falls afoul of prevailing gender norms, and loses her job in a garment factory when she is accused of behaving in a "lewd manner". The novel thus encompasses a wide range of themes centred on development and social change: the experience of migration to the UK, the politics of organising within migrant communities, inter-generational relationships, rural-urban migration, tensions around gender and culture, and the activities of charitable non-governmental organisations among destitute women workers in Dhaka. As the first book to enter in the UK mainstream to feature the broad subject of Bangladesh and Bangladeshi people – which provides a substantial and increasingly visible immigrant community in the UK, and forms the location of one of Britain's largest aid programmes during the past thirty years – it is arguable that *Brick Lane* has contributed to wider public understandings of development in ways that no academic writing ever has.[19]

There is also another reason why this novel is particularly relevant to our contention about the value of literary sources of knowledge about development. While it is reasonable to suppose that an author's reasons for writing a novel are bound up in a complex bundle of creative, personal and professional motivations, *Brick Lane* is at least partly inspired by recent academic research on Bangladeshi women. At the end of the book, the first acknowledgement is to the University of Sussex Institute of Development Studies academic Naila Kabeer, "from whose study of Bangladeshi women garment workers in London and Dhaka (*The Power to Choose*) I drew inspiration" (Ali, 2003: 371).[20] Kabeer's (2000) book is a study of gender and labour markets within the context of the simultaneous growth of women's employment in the garment sectors of Dhaka and London. The book contrasts employment conditions for women among Bangladeshi communities in the UK, where women work as home-based machinists in an apparent throwback to a nineteenth century form of economic organisation, with those in Bangladesh, where women from the 1980s onwards have increasingly moved out of seclusion into wage employment within modern, large-scale, export-based garment factories. Ali first became aware of *The Power to Choose* while working at Verso Press, which published the book.[21] Here then is a novel which builds on academic research to construct a fictional narrative, responding no doubt to the powerful and evocative testimonies provided by the real women who speak through Kabeer's book. The Kabeer/Ali story is an example of an unusual relationship that developed between "fact"

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[19] In a recent discussion held by the Development Studies Association with senior staff from DFID, it was acknowledged that learning more about, and contributing to the strengthening of, public understanding of development through development education was a key DFID priority for the future.

[20] It is interesting to note that the novel also pokes fun at academic work. At one point, Nazneen's husband Chanu cites the London School of Economics "World Happiness Survey" to support his argument for returning to Bangladesh: "Research led by professors at the London School of Economics into links between personal spending power and perceived quality of life has found out that Bangladeshis are the happiest people in the world. And LSE is a very respectable establishment, comparable to Dhaka University or Open University." (Ali, 2003: 290). A further irony here is that despite this LSE study being cited from time to time in the press and on websites, we are unable to find any conclusive evidence that it ever existed.

[21] Naila Kabeer, personal communication.

novel that concerns itself with almost unbearable hardship and tragedy, but Mistry manages to entertain through the deployment of a style that borders on the ethnographic – a representational method that has only rarely been evident within the development studies mainstream – that invokes the essential "being there" quality that convinces a reader over and above "either a factual look or an air of conceptual elegance" (Geertz 1988: 4). The book is particularly carried by the powerfully-drawn characters inhabiting this vividly described world, and A Fine Balance clearly has an edge over academic or policy texts as a result, as demonstrated by the fact that the novel has as become a fixture on university reading lists for courses on subjects such as rural-urban migration, urbanisation, and "livelihoods", over and above much of the extensive academic and policy scholarship that exists. This is however very obviously a function of the fact that Mistry's novel is a work of fiction, which meant that he had the freedom to carefully craft his characters in such a way as to reflect the dramatic social reality of impoverishment in India unhindered by the need to respect the inevitably limitations of – always imperfect and partial – empirical research.[16]

A Fine Balance's powerful narrative also allows it to transcend its difficult, even unattractive subject matter and edge towards a universal appeal based on a kind of "humanism with politics". At least partly as a result of this, it has been taken up by a wide audience, selling over half a million copies in the US alone by 2002, a much wider circulation than any academic or policy work on the same subject.[17] This is clearly another way in which literary fiction can claim to often be "better" than academic or policy texts, as it is clear that they will generally reach far more people and may therefore be more influential than academic or policy works in shaping public knowledge and understanding of development issues, which is of course crucial in terms of building public support for development policies, insofar as this is rarely determined merely by their content.[18] Sometimes this is clearly the result of a specific conjunction of events. For example, the US invasion of Afghanistan and continuing "war on terror" have obviously played a significant role in the success of Khaled Hosseini's extraordinarily popular novel The Kite Runner (2003), which has arguably done more to educate Western readers about the realities of daily life in Afghanistan (under the Taliban and thereafter) than any government media campaign, advocacy organisation report, or social science research.

The same is also true of another recent Booker Prize-nominated novel, Brick Lane by Monica Ali (2003). This rapidly became a fixture at the top of the UK bestseller lists following its publication, and led to its author joining the ranks of the prestigious "Granta New Young British Novelist" list. The novel chronicles the life of Nazneen, a Bangladeshi woman who is sent to Britain at age 18 to marry Chanu, a man twice her age. It provides a rich narrative of

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[16] For two examples of academic works that attempt to create a fictionalised "ideal type" of their object of study based on but not limited by the empirical reality of their underlying research, see Taussig (1996) and Hecht (2006), respectively on the nature of the state in Latin America and on the plight of street children in Brazil. Such works are extremely rare within the social sciences, however, and it is interesting to note that both of these originate from anthropology, perhaps the most empirical of social science disciplines.

[17] A Fine Balance was also the winner of the 1996 Commonwealth Writers Prize and was selected by the US television personality Oprah Winfrey as her "book of the month choice", all of which likely also boosted its sales.

[18] Of course, it is important to note that the power of literary fiction as a widespread and significant source of popularised information to shape public opinion can also be appropriated to promote ideas and notion that could be construed as "anti-developmental". The controversy surrounding Michael Crichton's (2004) recent novel State of Fear and its message about the ambiguities of global warming is a case in point (see Crowley, 2006).

served in the U.P. state provincial service, and then the Indian Administrative Service, being posted mainly around Lucknow. He could thus draw upon a lifetime of experience and observation in those settings that form the stage for the novel.

While this may well be the case, much of the force of the book clearly also derives from its literary qualities as a novel. *Raag Darbari* won one of India's most prestigious literary awards – the Sahitya Akademi Award – in 1970, and is widely considered to have taken the satirical genre to new heights within the context of Hindi-language post-Independence literature. The novel is a picaresque comedy that draws readers in through a series of inter-linked stories that are in turn satirical, ironic, and tragic, making witty use of vernacular wordplay and caricature, and providing rich, fine-grained descriptions of post-Independence rural small-town India. It furthermore ends on an unambiguous and in many ways prophetic message about the venality of local politics and the vice-like nature of poverty in the countryside that did much to change dominant perceptions of rural India at the time. In particular, the dramatic finale that suggests that migration is the only hope for the rural poor radically challenged prevalent romantic stereotypes of the Indian countryside being idyllic, harmonious, and timeless in a way that many academic and policy texts on rural India pointedly failed to do during the 1950s and 1960s. As such, *Raag Darbari* arguably constitutes an example of literary fiction that can be considered "better" – albeit in hindsight – than much of the academic or policy-oriented research from this period as a result of its nuanced understanding and detailed depiction of key development issues.

One reason for *Raag Darbari*'s successful depiction of the nature of rural poverty in India is arguably also the fact that it was not written within the restrictive conventions of academic or policy writing. Beyond superficial issues, such as the need for proper referencing, paying one's dues to predecessors, and so on, fictional writing can be said to enjoy a freedom of fabrication that allows it to present "ideal type" exemplifications of social phenomena in a way that empirically grounded academic literature sometimes cannot. The advantages are especially clear in relation to Rohinton Mistry's Booker-prize nominated novel, *A Fine Balance* (1996), which is all the more germane to this discussion insofar as Mistry explicitly writes with the intention to do more than simply entertain, prefacing his work with a quotation from Balzac's *Le Père Goriot* that deliberately seeks to blur the boundary between "truth" and "fiction":

> Holding this book in your hand, sinking back in your soft armchair, you will say to yourself: perhaps it will not amuse me. And after you have read this story of great misfortunes you will no doubt dine well, blaming the author for your own insensitivity, accusing him of wild exaggeration and flights of fancy. But rest assured: this tragedy is not a fiction. All is true.

A Fine Balance is set primarily at the time of the 1975-77 State of Internal Emergency in India, and traces the fortunes of four fictional characters as they try to survive communal tensions, rural to urban migration, downward socio-economic mobility, the state violence of population control programs, and the fragile search for mutual support networks, productive activity, employment and informal social services in Bombay. It is a relentlessly downbeat

11

compassion. It also places the humanitarian activities in their political context, both in the local situation of a country at war and in the politics of development bureaucracies and fundraising. Finally, the novel delightfully turns the refugees into real people—good *and* bad, loveable *and* pitiful—who actively endeavour to enrol NGO staff members and visitors to provide the necessary assistance.

Fielding's novel is strikingly different from most of the scholarly literature on NGOs. Reading this literature, one is usually presented with a black-and-white picture in which managers play the lead roles, all other actors remain silent and the organisations unfold their objectives in a participatory way. One wonders what these tidy organisations have to do with the other realities that reach us from developing countries, including social and political movements, conflict and fundamentalism. And one keeps wondering what really happens inside the organisations and how this relates to the lives of the NGO staff, volunteers and beneficiaries.

Hilhorst goes on to ask the question of "why would Helen Fielding succeed in giving this real-life account of an NGO where development scholars have failed, apart from the obvious reason that she brings her literary talent to this task?" The answer, she contends, is that development research on organisations in general and on NGOs in particular has paid too much attention to the formal organisational world and has assumed its boundaries, thereby ignoring the stories of the people who work in and with these organisations as well as the formal and informal relationships which link everyday practices across formal organisational boundaries. The nuanced portrayal of the NGO world in Fielding's novel contrasts strongly with this lack of imagination and depth, and illustrates well the point that informs our argument in this article, namely that fictional accounts of development can sometimes reveal different sides to the experience of development and may sometimes even do a "better" job of conveying the complexities of development than research-based accounts.[15]

Akhil Gupta (2005) similarly demonstrates the power of fiction in a recent article where he draws on both academic and literary works in order to write about corruption in India, including in particular, the novel *Raag Darbari* by Shrilal Shukla (1992 [1968]). According to Gupta (2005: 20-21), this latter narrative is not only "one of the richest works of fiction about the postcolonial Indian state" but arguably "a work whose insights into politics and the state in rural India are without comparison". Indeed, Gupta goes on to claim that "it is hard for me to think of another novel or ethnography that gives a more clearly etched picture of the large villages and small tehsil towns". At the same time, however, it can be argued that Gupta (2005: 21) effectively treats *Raag Darbari* as quasi-formal ethnographic research when he claims that its sharp portrayal of social reality derives from the fact that Shukla

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[15] Many other scholars and practitioners have made similar use of literature to highlight an issue, although few explicit their logic for doing so as clearly as Hilhorst. Von Struensee (2004), for example, uses Nigerian writer Buchi Emecheta's novel *The Bride Price* (1976) as a means of introducing the subject of bride price in a recent overview paper on the domestic relations bill in Uganda. In a related manner, it is common for social scientists to preface their work with literary citations, implicitly because they are revealing of the issue being written about (and no doubt also because this tends to generate a certain aura of cultural sophistication).

Moreover, although some of the works of fiction to which we make reference have been written by writers from the developing world, it is important to note that we are not attempting to construct a case for literature being a "voice from the developing world". This is an issue that Frederic Jameson (1986) considered in a classic essay on "Third-World Literature in the Era of Multinational Capitalism", where he proposed that all third world texts be read as "national allegories". Jameson was subsequently widely accused of being patronising and Eurocentric (see for example Ahmad, 1987), although Imre Szeman (2001: 804) has recently suggested that "almost without exception, critics of Jameson's essay have wilfully misread it", thereby obscuring "a sophisticated attempt to make sense of the relationship of literature to politics in the decolonizing world". Although this latter issue is clearly relevant to our task at hand, our canvas is much narrower than that of Edward Said (1993: xiii), for example, who explores the world of narrative fiction in terms of its position "in the history and world of empire".[13] Along with Said, we very much recognise the fact that "the power to narrate, or to block other narratives from forming and emerging, is very important to culture and imperialism, and constitutes one of the main connections between them", but our focus is on literature in general as an alternative representational genre through which to understand development processes and phenomena.

3. The usefulness of literary perspectives on development

In her recent study of non-governmental organisation (NGO) issues in the Philippines, Thea Hilhorst (2003) begins by making a strikingly unfavourable comparison between mainstream academic writing on NGOs and the portrayal of the world of NGOs in a recent work of popular fiction. Hilhorst opens her monograph with a brief discussion of Helen Fielding's novel *Cause Celeb* (1994), a mainly light-hearted chronicle of the adventures of Rosie, a disenchanted London public relations manager who becomes involved in international humanitarian efforts to address famine in an African country.[14] Hilhorst's (2003: 1-2) point is that, perhaps unexpectedly, Fielding's novel presents a relatively nuanced picture of international development work and organisational life:

> In the novel, Rosie's NGO does what organisations do: it has a mission
> and clear objectives, staff with differentiated responsibilities, and it works
> with a budget for planned activities. Yet the novel also brings out how this
> NGO is shaped by actors in the organisation and their surrounding
> networks. These people carry out activities according to their
> understanding of the situation and follow the whims of their personalities,
> motivated by various combinations of sacrifice, self-interest, vanity and

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[13] This is an issue that has been extensively taken up within the emergent field of "cultural studies", as part of its effort to achieve a synthesis of social science and literary studies. In particular, it aims to "dismantle the elitism of the distinction between high and popular culture within literary studies" (Schech and Haggis, 2000: 26), which in many ways we see as analogous to our interest in questioning the distinctions between different types of knowledge about development. Cultural studies as a discipline is however much broader and also concerned with the relationship between society and the production of texts, which is an issue that it is beyond the scope of this paper to explore in detail, although obviously relevant.

[14] Changing emphasis to a completely different subject matter, Fielding later went on to write the hugely popular and influential Bridget Jones "chick-lit" novels.

9

"rigorously" – addressed through technocratic means, for example through the adoption of "tool kits", "better policies", "best practices", and "stronger institutions" as determined by "solid evidence" and "rational planning".[9] Such documents inherently privilege certain forms of information, explanation, and "evidence",[10] and in conjunction with the politically powerful places from whence they emanate – and the imperatives that Weberian organisations have for presenting problems and solutions in neat packages (Pritchett and Woolcock, 2004) – thereby according a particular status to certain forms of knowledge, authority, and representation.[11]

Obviously, as scholars-practitioners ourselves, we are acutely conscious of the constant need to frame complex development issues in ways that resonate with broad audiences – students, advocacy groups, politicians, bureaucrats – and that are plausibly "actionable" by front-line project staff. This inevitably often means accepting a certain amount of "blueprint development" that "tell[s] us at once that things happen 'like' the way they are described – after all narratives relate things causally – without, however, reflecting the fact that things happen ...so uncertainly" (Roe, 1991: 296). At the same time, however, another way of putting this is that having a "good story" is essential if one wants to make a difference in the world (as most people in development surely are). Seen in this way, it can plausibly be contended that works of fiction, as original *bona fide* "stories", also potentially have much to contribute to the storehouse of knowledge on development processes, manifestations, and responses. When one story is a more compelling means of articulating a situation than another, then development scholars and practitioners ought to perhaps think more positively about it, be it a novel, a poem, or a play rather than an academic monograph or policy report.

From this perspective, it can be contended that as the scholarly and policy communities continue to grapple in the beginning of this new millennium with ways to ameliorate their theories and strategies of development, turning to novelists, poets, and playwrights for inspiration and ideas could plausibly be instructive. The next sections endeavour to take literary perspectives on development seriously, teasing out a number of themes and lessons from selected examples in order to demonstrate to those who primarily concern themselves with more formal – empirical, theoretical, and applied – representations of development that alternative narratives may also be of potential interest.[12] The authors we have selected are those that, for different and sometimes idiosyncratic reasons, we feel have important things to say, regardless of their origins, and whose work illustrates the points that we wish to make. We do not claim to be either exhaustive or representative in our choices of literary works, which are dictated by our own personal readings, and hope that our partial coverage will stimulate others to propose their own short-lists of readings.

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[9] See also Scott (1998) for a discussion of similar processes in relation to the development of the modern state.

[10] The same can be said of some academic contributions – see for example Collier and Gunning (1999).

[11] Indeed, on the basis of his close engagement over many years with a large development project in Western India, David Mosse (2004) in fact goes so far as to suggest that policy documents are largely *ex post* rationalisations of development practice, with both means and ends shifting in accordance with political fortunes and (perceived) project efficacy. At the same time, see Bebbington *et al.* (2004) for a response by "insiders" to the use of public documents to divine and assess World Bank "policy" in the realm of social development.

[12] In some respects there are parallels between this article and Sherman (2001), who uses literary sources to document changing public attitudes toward the poor in turn of the nineteenth century Britain. See also Herman (2001) on the rendering of the poor in nineteenth-century Russian literature.

8

However, literary authors such as the Nobel Prize winning Naguib Mahfouz, in his novels *Adrift on the Nile* (1993[1966]) and *The Journey of Ibn Fattouma* (1993 [1983]), or Ahdad Soueif in her Booker Prize nominated novel *The Map of Love* (1999), provide very different analyses, respectively pointing to factors including modernization and the concomitant spread of anomie, religious fundamentalism, and the colonial legacy as critical to explaining Egypt's contemporary predicament. The wider corpus of Mitchell's work (see 1991; 2000) strongly supports that these are key factors to understanding the country's current development.

Similarly, the recent and influential World Bank (2000) report *Can Africa Claim the 21st Century?* – co-authored with several other development organisations, it should be noted – is another example of such disjuncture. It optimistically and proactively affirms that Africa's future depends on "determined leadership", "good governance", "sound policies", "improved infrastructure", "investments in people", "reduced conflict", "higher economic growth", and "reduced aid dependence". While all of these factors are undoubtedly eminently sensible from an "orthodox" policy point of view, they ring like empty platitudes when held up against the insights of fictional accounts of Africa's developmental predicament such as Chinua Achebe's *Things Fall Apart* (1958) or J. G. Ballard's *The Day of Creation* (1987), for example. Achebe's novel details the lasting legacy of colonialism in Nigeria, including the conflicts generated around cultural practices, but it also traces the power struggles that traditionally run through tribal communities, showing these to also be a source of change and constant struggle. Ballard's *The Day of Creation* actually focuses directly on development practice insofar as the central character is a doctor – significantly named Dr. Mallory – running a WHO clinic in an unnamed underdeveloped, drought-plagued, and poverty-ridden West African country caught in the midst of a civil war. As the novel unfolds, Mallory is confronted with the perversity of the processes and manifestations that he once saw as epitomising development, ultimately drawing conclusions about the futility of the process as conceived on Western terms.

The argument that we are trying to make here is not that academic or policy approaches to development are necessarily wrong or flawed, nor is it that we think novelists should be put in charge of development ministries. Rather, our point is that the policy and academic literature of development often constructs development problems in a way that justify the response of the particular policies they advocate (Ferguson, 1990; Escobar, 1995; Mitchell, 2002), and that the way this literature is framed therefore makes a significant difference. This is of course an issue that can be said to go to the heart of the art of story-telling,[8] and indeed, Emery Roe (1991 & 1994) argues that to a large extent policy documents such as those produced by the World Bank should be understood as "narratives" that frame what and how development problems are discussed by powerful actors, thereby validating the ubiquitous role of (and interventions by) professional "experts", and legitimising efforts to construe deeply complex historical and political issues as being most effectively – and most

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[8] Indeed, as Mark Moore (1987: 80) astutely notes, the ideas that become dominant public ones frequently do so insofar as they "distinguish heroes from villains, and those who must act from those who need not. ...[T]o the extent that these distinctions fit with the aspirations of the parties so identified, the ideas will become powerful. If powerful people are made heroes and weaker ones villains, and if work is allocated to people who want it and away from people who do not, an idea has a greater chance of becoming powerful".

"republic of letters" that the industrial revolution and a concomitant concentration of an increasingly literate population into urban centres were seen to be creating (see Keen, 1999). Literature was considered politically charged within the context of Britain's changing social conditions, and a powerful vector for shaping of public values and morality, to the extent that the British anarchist William Godwin (1993 [1793]: 20) wrote:

> Few engines can be more powerful, and at the same time more salutary in their tendency, than literature. Without enquiring for the present into the cause of this phenomenon, it is sufficiently evident in fact, that the human mind is strongly infected with prejudice and mistake. The various opinions prevailing in different countries and among different classes of men upon the same subject, are almost innumerable... Now the effectual way for extirpating these prejudices and mistakes seems to be literature.

The power of literature to effectively convey complex ideas should not be surprising. Over forty years ago, Lewis Coser published the first edition of his classic (but unfortunately now out-of-print) *Sociology through Literature*, an unprecedented introduction to sociology through an eclectic collection of literary fiction. Citing Henry James in the introduction to his volume, Coser (1972 [1963]: xv) argued that "there is no impression of life, no manner of seeing it and feeling it, to which the plan of the novelist may not offer a place". As such, writers of fiction "have provided their readers with an immense variety of richly textured commentaries on man's life in society, on his involvement with his fellow-men," to the extent that literature can constitute a key form of social evidence and testimony. Coser (1972 [1963]: xvi) was careful however not to suggest that literature could replace "systematically accumulated, certified knowledge". Rather, he saw them as complementing each other, but argued that "social scientists have but too often felt it is somewhat below their dignity to show an interest in literature". This "self-denying ordinance" was highly problematic according to Coser (1972 [1963]: xvi), who contended that

> there is an intensity of perception in the first-rate novelist when he describes a locale, a sequence of action, or a clash of characters which can hardly be matched by ...sociologists. ...The creative imagination of the literary artist often has achieved insights into social processes which have remained unexplored in social science.

From this perspective, an argument can clearly be made that it might be useful to compare and contrast literary views on development with the ideas and perceptions of academic social science and the public policy world, in order to glean new insights and novel perspectives (so to speak). Certainly, the themes emanating from "development policy" documents – the official texts produced by multilateral development agencies, government planning offices, and NGOs – can often be rather starkly contrasted with those of fictional writing on development. For example, in a stimulating study of the way in which the World Bank construes Egypt's development predicament, Timothy Mitchell (2002) underlines how official documents portray this as a function of demographic and geographic factors – too many people producing too little food because of not enough arable land – and how this has in turn given rise to a corresponding policy focus on agricultural and irrigation projects.

The first is that one is fiction and the other is non-fiction: the basis for telling the story is different. However, this is relative. There are many writers who use factual events for their novels and many social scientists who use fictitious reality to illustrate their theses... The second is that social scientists are obliged to be systematic, that is, to demonstrate a method, which is also relative. Writers often have a very systematic method... The third is the presence or lack of aesthetic expression, and this is a difference that, following R.H Brown ... I propose to abolish.

The historian Hayden White (1973) implicitly goes even further in dismissing this distinction in his famous study of the "historical imagination" when he contends that social science often tends to draw its authority from its perceived aesthetic value rather than the use of putatively "factual" data or "objective" theory. Focusing on nineteenth century European historical accounts, he shows how these were structured along similar lines to the realist novel, with their force and persuasion deriving principally from the deployment of similar rhetorical strategies to those found in the latter. According to White, this was because ultimately all interpretation is fundamentally rhetorical in nature; it is a process that occurs when there is uncertainty as to how to describe or explain a phenomenon, and consequently figurative rather than objective means of persuasion will inevitably be resorted to.

Seen in this way, the line between literature and the social sciences becomes a very fine one. This is also the case when storytelling is considered historically, as one of mankind's oldest methods of possessing information and representing reality. Certainly, as Michel Foucault (1984) has perceptively pointed out, those texts that we today categorise as "literary fiction" – stories, poems, plays – were in fact once accepted as the primary media for the expression of essential truths about human dilemmas and understandings of the world, in the same way that in this day and age positivist scientific discourse is received as authoritative *pro forma*. Indeed, fiction is arguably to a large extent frequently about the very issues that at a basic level are the subject matter of development studies: the promises and perils of encounters between different peoples; the tragic mix of courage, desperation, humour, and deprivation characterising the lives of the downtrodden; and the complex assortment of means, motives, and opportunities surrounding efforts by outsiders to "help" them. From this perspective, one might even say – with apologies to the William Shakespeare – that in many ways stories "are such stuff as [development studies] are made on".[6]

Furthermore, the role of literature has historically always been not only "to delight" but also "to teach", as was pointed out by the Roman poet Horace over two thousand years ago.[7] Sir Thomas More famously claimed that he was compelled to write his powerful political tract *Utopia* (1516) as "a fiction whereby the truth, as if smeared by honey, might a little more pleasantly slip into men's minds" (More, 1964: 251). This prescriptive ideal was perhaps most clearly expressed in late 18th century Britain during the debates around the so-called

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[6] See Shakespeare's *The Tempest*, Act IV, scene 1, line 155.
[7] Horace's original expression was that literature – and more specifically poetry – should be both "sweet and useful" (see Horace, 1959: 75). Its oft-cited formulation as "to teach and to delight" is generally attributed to the 16th century soldier-poet Sir Philip Sydney in his famous *Apology for Poetry* (2002 [1595]).

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Our central contention concerns the potential contribution that works of literary fiction can make to development.[4] It is important to note from the outset that our intention is not to make any relativist epistemological claims that literary forms of representation can substitute for academic or policy works in the study of development. Rather, we want to lay down a challenge to practitioners and academics within the field to include fictional representations of development issues within the scope of what they consider to be "proper" forms of development knowledge. The article begins by making some general remarks about the nature of knowledge, narrative authority, and representational form, highlighting in particular the common ground that exists between fiction and non-fiction. We then explore the contributions that a number of works of modern popular fiction touching on development themes potentially make to our understanding of development, and juxtapose these with the contributions of more formal academic and applied approaches. A final section sets out an agenda for further debate, draws some preliminary conclusions and proposes a list of relevant works of fiction that we feel may be of interest to those whom we may have persuaded of the importance of our endeavour.

2. Knowledge, authority and narrative form

There clearly exists within development studies a hierarchy of authority which determines what constitutes "valid" development knowledge. Although much of the sound and fury in today's development debates stems from what can be described as a "clash of epistemologies" – in which different understandings of the meanings and renderings of development come into contact with one another – in many ways there exists a much deeper schism that affects the very nature of what is considered knowledge and what is not. This involves decisions about the acceptable form that development "stories" must take to be deemed serious. Even if in recent years there have been some attempts to broaden the development knowledge base beyond traditional academic monographs and policy manuals – including perhaps most notably the World Bank's "Voices of the Poor" initiative,[5] which has explicitly sought to bring a story-telling methodology centre-stage within the production of development knowledge – these remain overwhelmingly the standard representational form for the dissemination of development knowledge within the discipline. As such, they can be said to constitute the benchmark against which other forms of knowledge representation are measured within development studies – broadly construed as encompassing both the academic and practitioner worlds – and those that do not match up are generally discarded or ignored, including in particular literary forms of representation.

To a certain extent, this devaluing of narrative forms of knowledge mirrors a fundamental divide between literature and social science. As Barbara Czarniawska-Joerges (1992: 218) succinctly outlines – and simultaneously undermines – the separation derives from at least three factors:

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[4] In this paper we are limiting ourselves to works of literary fiction due to limitations of space, but we fully recognise that other forms of fictional representation, such as films and plays, constitute important communicative mediums for addressing key themes in development. In the future we hope to write a separate paper on "development" as addressed in films (tentatively titled "The projection of development").
[5] See Narayan et al. (2000a & 2000b), and Narayan and Petesch (2002). See also the "Voices of the Poor" website at: http://www.worldbank.org/poverty/voices/

But words are things, and a small drop of ink,
Falling like dew upon a thought, produces
That which makes thousands, perhaps millions, think.[1]

My task which I am trying to achieve is, by the power
of the written word, to make you hear, to make you feel
– it is, above all, to make you see. That – and no more,
and it is everything."[2]

1. Introduction: development and representation

"Development" is one of the key organising concepts of the modern era. As such, ideas and images of development are inevitably represented in a wide variety of ways, whether within academia, the policy world, or the general public domain. To this extent, it can be contended that all forms of development knowledge can be – and historically have been – largely understood as a series of "stories". This is true not only in the pragmatic sense that to have an impact on public opinion, organisational strategy, or within academia, even the most elaborate equations and sophisticated data analyses need to be able to be expressed in everyday language (Denning, 2000), but also in the deeper philosophical sense that all knowledge claims are necessarily embedded in particular subjective understandings of how the world works, as was famously pointed out by Walter Benjamin (1989) in his classic essay "On the Program of the Coming Philosophy".

Benjamin not only contended that all knowledge of reality is unavoidably subjective but also that it is inevitably mediated by the representative forms which describe it, and that different modes of representation therefore impart different visions of the world. He was of course not the first to highlight this issue, which can be placed within a philosophical tradition going back in the West to the 4th century BC and Plato's famous "Simile of the Cave", and even further in the East, to the 6th century BC parable of the blind men and the elephant recorded in the Buddhist *Udana*. We take Benjamin (1989: 9-10) as our starting point, however, because he saw this concern as critical for the social sciences, arguing that the key challenge was the creation of "a concept of knowledge to which a concept of experience corresponds". Benjamin made it his life's work to design a form of representation which would capture the subjective dimension of social reality whilst simultaneously allowing an objective knowledge of the world.[3] Our purpose in this article is more modest; we seek merely to suggest that there may be a case for widening the scope of the development knowledge base conventionally considered to be "valid". In doing so, we aim to open up new ground within development studies for the further exploration of the value of different forms of development knowledge, and to this extent we acknowledge that our paper inevitably seeks more to ask questions than to provide answers.

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[1] Byron, (1973 [1819-24]: 182).
[2] Conrad (1985 [1897]: 1).
[3] This culminated in Benjamin's celebrated *Arcades Project*, an unfinished palimpsest of assorted notes, quotations, and aphorisms which attempted to put together a new theory of history embodied in a new literary and philosophical historiography (see Benjamin, 1999).

Abstract

This article introduces and explores issues regarding the question of what constitute valid forms of development knowledge, focusing in particular on the relationship between fictional writing on development and more formal academic and policy-oriented representations about development issues. We challenge certain conventional notions about the nature of knowledge, narrative authority, and representational form, and explore these by comparing and contrasting selected works of recent literary fiction that touch on development issues with academic and policy-related representations of the development process, thereby demonstrating the value of taking literary perspectives on development seriously. Not only are certain works of fiction "better" than academic or policy research in representing central issues relating to development, but they also frequently reach a wider audience and are therefore more influential. Moreover, the line between fact and fiction is a very fine one. The article also provides a list of relevant works of fiction that we hope academics and practitioners will find both useful and enjoyable.

Key words: development knowledge, representation, narrative authority, fiction

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The Fiction of Development:
Literary Representation as a Source
of Authoritative Knowledge

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Creating and sharing knowledge to help end poverty

The Return of the Slum:
Does Language Matter?

ALAN GILBERT

Abstract

The 'cities without slums' initiative has resuscitated an old and dangerous term from the habitat vocabulary. Use of the word 'slum' will recreate many of the myths about poor people that years of careful research have discredited. The UN has employed the word in order to publicize the seriousness of urban problems and to improve its ability to attract funding with which to tackle the issue. But in using such an emotive word the UN risks opening a Pandora's box. The campaign implies that cities can actually rid themselves of slums, an idea that is wholly unachievable. The word is also dangerous because it confuses the physical problem of poor quality housing with the characteristics of the people living there. The UN knows that earlier research has rehabilitated most 'slum dwellers' but ignores the danger of conjuring up all of the old images. In the process, the campaign also offers an oblique invitation to governments to look for instant solutions to insoluble problems. Demagogic governments have always shown a willingness to demolish slums despite the fact that experience has shown that policy to be ineffective. I fear that the new campaign will encourage more to employ this foolish policy. Words need to be employed carefully.

> Hundreds of millions of urban poor in the developing and transitional world have few options but to live in squalid, unsafe environments where they face multiple threats to their health and security. Slums and squatter settlements lack the most basic infrastructure and services. Their populations are marginalized and largely disenfranchised. They are exposed to disease, crime and vulnerable to natural disasters. Slum and squatter settlements are growing at alarming rates, projected to double in 25 years (World Bank/UNCHS, 2000: 1).

> . . . rapid urban growth in the context of structural adjustment, currency devaluation, and state retrenchment has been an inevitable recipe for the mass production of slums (Davis, 2006: 17).

The new millennium has seen the return of the word 'slum' with all of its inglorious associations. With the launch of the 'cities without slums' initiative in 1999, the UN reintroduced this dangerous word into the habitat vocabulary.[1] After decades when most prudent academics and practitioners had avoided using it, the UN thrust the slum into full focus as the target of its main shelter programme and as one element of the millennium development goals campaign. The UN justifies its onslaught against the slum because: 'Although figures vary depending on the definition, hundreds of millions of slum dwellers exist world-wide, and the numbers are growing at unprecedented rates' (World Bank/UNCHS, 2000: 15).

'The "Cities Without Slums" initiative has been endorsed at the highest political level internationally as a challenging vision with specific actions and concrete targets to improve the living conditions of the world's most vulnerable and marginalized urban

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1 For the history of the campaign, see http://www.citiesalliance.org/activities-output/topics/slum-upgrading/action-plan.html.

residents' (World Bank/UNCHS [Habitat], 2000). The goals of that initiative were documented more fully in the provocatively titled book *The Challenge of Slums* (UN-Habitat, 2003a).

If the slum has still not become front page news, the anti-slum initiative has managed to persuade a few more journalists and NGOs to address urban issues. The slum has also been the main focus of some recent well-known books (Verna, 2003; Maier, 2005; Davis, 2006). And, in a world where ordinary, grinding poverty is always displaced in news coverage by emergencies like that in Darfur or the Pakistan earthquake, that is no mean achievement.[2] A campaign is justified if it manages to remind liberal-minded people of the injustices that face so many in this world. However, a real danger exists that if journalists and others convey messages about shelter problems in too exaggerated a way, the campaign may backfire on the supposed beneficiaries. Emphasize too heavily the disease, crime and difficulties associated with slum life and it will refuel the kind of fears that already encourage the rich to move to their gated communities. To judge from recent articles from *The Guardian* newspaper, the media are all too keen to promote a message of doom, despondency and fear (McLean, 2006; Rowell, 2006; Seager, 2006).

> In a squeezed square mile on the south-western outskirts of Nairobi, Kibera is home to nearly one million people — a third of the city's population. Most of them live in one-room mud or wattle huts or in wooden or basic stone houses, often windowless. It's Africa's biggest slum. The Kenyan state provides the huge, illegal sprawl with nothing — no sanitation, no roads, no hospitals. It is a massive ditch of mud and filth, with a brown dribble of a stream running through it . . . Kibera won't be an extreme for much longer . . . The UN predicts numbers of slum-dwellers will probably double in the next 30 years, meaning the developing world slum will become the primary habitat of mankind (McLean, 2006).

According to such reports, the world will soon be infested with slums, poverty and disease. Rather than journalists picking up the message that self-help settlements can and must be improved, it seems that they have picked up, and milked, the word 'slum'. By implication, their messages all say that every 'slum' is as bad as Kibera.

NGOs seem to have reacted in a similar way. The urban adviser of Care International has recently written: 'Every second, someone in the world moves into a slum. Over the next 30 years, the world's slum population will, on average, increase by 100,000 each day. Globally, we are seeing a shift from rural areas to cities and, before the year is out, a higher proportion of people will be living in cities than ever before' (Rowell, 2006).

Radical writers, like Mike Davis, are also jumping on the bandwagon. Davis (2006: 201) observes that 'peri-urban poverty — a grim human world largely cut off from the subsistence solidarities of life of the traditional city — is the radical new face of inequality'. He warns that these 'urban badlands' are the new territory from which insurgency will spring (*ibid.*: 202). Indeed, he seems almost to welcome that insurgency when he states that: 'the future of human solidarity depends upon the militant refusal of the new urban poor to accept their terminal marginality within global capitalism'. Verma (2003) too gives a radical slant to the problem when she claims that the root cause of urban slumming in India lies not in urban poverty but in urban greed.

I am sure that each of these authors has the best interests of the poor at heart and only intends to draw attention to their neglect. More must be done to help the poor and inequality is a substantial part of the problem. But, because we have always had great difficulty in distinguishing real slums from apparent slums, a generally negative universal image can be dangerous. In particular, it may tempt politicians and planners to make play with the horrors of the urban future as embodied in the word 'slum'. Demagogic mayors and government ministers may claim that they will re-house the inhabitants of Kibera and its like; more authoritarian planners may simply threaten to

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2 Is it wholly unconnected that two recent Oscar winning films, *Cidade de Deus* and *Tsotsi*, have been based in 'slums'?

demolish slums in order to 'help' the people. In the past, removing slums has rarely helped the residents, and as often as not assistance was never the principal aim. As such, anything that over-simplifies a complicated issue is dangerous, particularly when it employs a word that has as long and disreputable a history as the 'slum' (see below).

What is a slum?

Whenever action is required, it is necessary to identify the target population. So what is a slum?

Today, the noun 'slum' is employed in popular usage to describe 'bad' shelter. It is used at varying scales: anything from a house to a large settlement can be classified as a slum providing that it is perceived to be substandard and is occupied by the poor. The *Oxford Encyclopedic Dictionary* (OED) provides two definitions: 'an overcrowded and squalid back street, district, etc. usually in a city and inhabited by very poor people; and a house or building unfit for human habitation' (Hawkins and Allen, 1991: 1369).

In practice, every city in the world tends to define slums differently, even though efforts have been made for years to establish objective measures with which to demarcate the major problem areas. Even in Victorian cities: 'An essential backdrop to all nineteenth century slum campaigning was the development of the science of statistics'; a tendency 'epitomised by the research of Charles Booth' (Prunty, 1998: 5–6).

Recently, the Cities Alliance attempted to define what they meant by a slum (World Bank/UNCHS, 2000: 1):

Slums do not have:

- basic municipal services — water, sanitation, waste collection, storm drainage, street lighting, paved footpaths, roads for emergency access:
- schools and clinics within easy reach, safe areas for children to play;
- places for the community to meet and socialize.

Later deliberation refined that definition:

The operational definition of a slum that has recently been recommended [by a UN Expert Group Meeting] . . . defines a slum as an area that combines, to various extents, the following characteristics (restricted to the physical and legal characteristics of the settlement and *excluding the more difficult social dimensions*): inadequate access to safe water, inadequate access to sanitation and other infrastructure, poor structural quality of housing, overcrowding, and insecure residential status' (italics added by this author) (UN-Habitat, 2003a: 12).

In attempting to define a slum, the UN is engaging in the modern and perfectly proper practice of establishing 'targets' against which progress can be measured. This task demands a baseline against which the future can be compared. To calculate that baseline, the UN has chosen to employ an absolute measure of deprivation: ' "absolute" slum measurements rest on defining a minimal level of physical need, thus establishing a "slum line" below which a residence is classed as unfit for human occupation' (Prunty, 1998: 4).

Unfortunately, there are problems in identifying slums through absolute measures. The first is that standards differ across the world so what is considered to be a slum by poor people in one country may be regarded as perfectly acceptable accommodation by much poorer people in another. What is considered to be unfit clearly varies from place to place and from social class to social class.

The second problem is that many low-income settlements in the world are anything but homogenous (see below). While some settlements lack every kind of service and infrastructure, many others are partially serviced. Those settlements without water may

be classified as slums but what about those settlements with provision but where some, even many, of the inhabitants cannot afford to pay for it? Diversity is inherent in many older shanty towns where some plots contain substantial houses with several storeys and others flimsy shacks. Even tenure is highly variable within older self-help housing areas because poor home owners let parts of their accommodation to tenants (Gilbert, 1993; UN-Habitat, 2003c).

However, there is a third and much more serious problem. The word 'slum' is not just an absolute but is also a relative concept. That is why Yelling (1986: 1) observes that the word is 'a term in the discourse of politics rather than science'. If a slum is a relative concept, viewed differently according to social class, culture and ideology, it cannot be defined safely in any universally acceptable way. Nor is the concept stable across time because what we consider to be a 'slum' changes. In cities where the general quality of housing gradually improves, areas that do not change become 'slums' because of their relative neglect. Outside toilets used to be acceptable in western Europe, but today houses without an inside toilet are considered to be unacceptable. This is precisely the same complication that confronts the measurement of poverty. In the EU, if some people become relatively richer, the index of poverty automatically classifies more people as poor.[3] To make real sense, the baseline definition of a slum, like poverty, has to be both absolute and relative.

But if slums are relational and as much a figment of the mind as a physical construct, then it is difficult for any government or international organization to eliminate them. Indeed, as public expectations rise, and in a globalized world with ready access to television they are almost bound to do so, slums will increase in number as and when populations realized how absolute standards elsewhere are higher. If that is the case, why promise to eliminate them?

Recognizing that it had a problem, the Cities Alliance sensibly chose to measure progress on the basis of two criteria: '(i) the proportion of people with access to improved sanitation; and (ii) the proportion of people with access to secure tenure' (World Bank/ UNCHS, 2000).[4] Notwithstanding the difficult measurement problems that this involves, particularly with the nebulous concept of secure tenure (UN-Habitat, 2003c), the choice of two simple criteria makes sense. But, if those two are the measure, why use an emotive term like 'slum'? Why, despite realizing the definitional problems is the slum being considered as 'a typology in itself to classify human settlements' (UN-Habitat, 2003b: 14)?

Why has the term been adopted?

Increasingly, UN and multi-national development organizations have to justify their existence, they have to be seen to be both useful and effective. They need to demonstrate that their designated domain addresses significant humanitarian issues that require serious and urgent action. If they cannot convince their financial masters that they have an important job to do, and that they are able to perform the task, their funding is likely to come under threat. The World Bank has struggled to identify its real role ever since the absolutes of the Washington Consensus came to be questioned and the appointment and recent difficulties of Paul Wolfowitz have hardly helped uphold the legitimacy of that august institution (Stiglitz, 2002; *The Economist*, 2007).

In the late 1990s, the UNCHS also had an identity problem and major funding difficulties. The institution has come out of that crisis by changing its name and by

3   Most EU countries define poor households as those whose income is less than 50% or 60% of the median income of the country. This means that poverty increases, even if in absolute terms the 'poor' have become better off over time. The USA errs on the other side by only using an absolute measure. For a simple explanation of the problem, see *The Economist* (2005).
4   The 'cities without slums' goal is now represented as target 11 of the millennium development goals.

appointing a new director, Anna Tibaijuka, who has been very successful in modifying the image of the organization. The organization has embraced the millennium development goals and taken responsibility for monitoring and implementing goal 7, target 11. It is helped in the task by the Cities Alliance, set up by a coalition of the World Bank, UN-Habitat, UNEP and the Asian Development Bank. The 'cities without slums' slogan was one of the means of establishing the importance of the organization's function.

Whether the initiative, along with the rest of the millennium development goals, will be successful is another question. Some, like Davis (2006: 76), argue that this is mere window dressing. 'The emerging "post-Washington consensus" ', of which this clearly forms part, is 'better characterised as "soft imperialism", with the major NGOs captive to the agenda of the international donors, and grassroots groups similarly dependent upon the international NGOs'. The effect of this process '. . . as even some World Bank researchers acknowledge, has been to bureaucraticize and deradicalize urban social movements'. I happen to disagree with that interpretation because I have no doubt that the officials in charge of the slums initiative want to improve housing conditions for the urban poor and genuinely believe that they can do so. I can also understand the bureaucratic reasons for their having adopted a high visibility slogan. However, I wholly agree with Davis's claim that: 'Syrupy official assurances about "enablement" and "good governance" sidestep core issues of global inequality and debt, and ultimately they are just language games that cloak the absence of any macro-strategy for alleviating urban poverty' (Davis, 2006: 79). My fear is that 'the language games', of which cities without slums forms part, may actually undermine the limited good that an otherwise commendable campaign will actually achieve.

What is dangerous about the term?

What makes the word 'slum' dangerous is the series of negative associations that the term conjures up, the false hopes that a campaign against slums raises and the mischief that unscrupulous politicians, developers and planners may do with the term. Since writing the first draft of this article I have discovered that Gans (1990) makes a similar complaint about the dangers inherent in using the term 'underclass'.[5] The difference is that he is complaining about the dangers that are inherent in using a new, somewhat euphemistic, term. I am complaining about resuscitating an old, never euphemistic, stereotype; one that was long ago denounced as dangerous and yet has now resurfaced in the policy arena.

The negative associations

As previous authors have pointed out the word 'slum' has nearly always been used pejoratively or ideologically, often both at the same time. Yelling (1986: 1) observes that the word 'slum' 'carries a condemnation of existing conditions and, implicitly at least, a call for action'. Marris (1979: 419) points out that: 'The word "slum" is like the word "dirt": evocative, disapproving, and indefinable except in the context of our expectations of what should be'. More recently, Flood (2002: 3) has recognized that:

> 'Slum' has become an unfashionable term in the West, being strictly pejorative and associated with all forms of negative social outcomes and squalor expressed in a spatial or housing sense. It is a term very much in the spirit of Christian reformism and later Western capitalism, which has sought to define it as counterfactual, both conceptually and in the physical sense, to modernist ideals of social and physical order, morality, health, spaciousness and urban quality.

5 Thanks to one of the referees for directing me to that article.

Slums were identified as containing the poorest quality housing, the most unsanitary conditions, the poorest people: a refuge for marginal activities including crime, 'vice' and substance abuse; and a likely source for many epidemics that ravaged urban areas.

The very origins of the word 'slum' are cloaked in negativity. Insofar as we know when or where the word was first used, it seems that initially it did not apply to housing at all.[6] The first written appearance of the term was apparently in 1812 when it appeared in Vaux's *Vocabulary of the Flash Language* (Davis, 2004: 12; *Oxford Economic Dictionary Online*, no date: 216), when a slum was inauspiciously labelled as being 'synonymous with "racket" or "criminal trade" ' (Prunty, 1998: 2).[7]

When the slum did take physical form, it 'was just a single room — a place for slumber' (Dennis, 2004: 235). But it quickly grew in size to include whole areas, typically inner-city areas containing older housing of poor quality. The slum also changed form over time. In the nineteenth-century English city, slums were often found in basements and in the Victorian imagination: 'You went down into slums, into the abyss' (Dennis, 2004: 236). However, even then slums could also be found in attics at the top of houses — perhaps the origin of the commonly used epithet 'rookeries'. Much later, with the construction and subsequent deterioration of the post-war council estates of the developed world, many 'slums' went up. And, as the context changed, and shantytowns and self-help settlements proliferated, 'slums' climbed hillsides, spread into flood plains and generally occupied any land that was cheap or could be invaded. The only common element over time has been that 'slums' have always been perceived to be undesirable places in which to live.

The civic authorities in the nineteenth century began identifying 'slums' because they were dangerous to people's health: 'The relentless exposure of slum conditions, which characterized the early stages of the slum debate in Dublin (1798–1850s), was concerned mostly with infectious disease' (Prunty, 1998: 15–16). For this reason, it became increasingly common to call them 'unhealthy areas' a term that 'was derived from the 1875 Housing Act (the Cross Act) and passed into common use after 1919' (Garside, 1988: 24). Slums were dangerous to the people who lived there but, perhaps even more importantly, might launch an epidemic that would endanger everyone in the city.

But slums were also identified, and stigmatized, because they were seen to be centres of crime. In the 'earliest recorded definition' the 'slum' describes 'any particular branch of depredation practised by thieves, and a "lodging slum" [is] defined as "the practice of hiring ready furnished lodgings and stripping them of the plate, linen and other valuables" ' (Prunty, 1998: 2). Is it by chance that Dickens (1846) housed Fagin and the Artful Dodger in a slum? In most cities around the world, the association between slums, ill-health and crime still resonates in most people's minds.

Indeed, it is this association between slums and the supposedly evil character of those who live there that is the most worrying aspect of our renewed use of the term. To some, the slum has always turned people into misfits. The architect and social reformer, George Godwin (1854: 1), long ago observed that: 'homes are the manufactories of men — as the home, so what it sends forth'. 'Dirty, dilapidated, and unwholesome dwellings destroy orderly and decent habits, degrade the character, and conduce to immorality' (*ibid.*: 45). Very much later, Oscar Lewis' studies of rental tenements argued that poor living conditions in Mexico City, New York and San Juan helped create a subculture of poverty (Lewis, 1959; 1966a; 1966b). In the 1980s, Alice Coleman had her 15 minutes of Warholian fame when the Thatcher government accepted that badly designed high-rise flats helped to produce rotten people and encourage criminality (Coleman, 1985).

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6   Perhaps that is the origin of the term, a room for slumber? However, Prunty (1998: 2) notes that: 'Dictionary entries from the 1870s define "slums" as dirty, muddy back streets, and conjecture a possible German etymology, from *schlamm*, mire, as in the Bavarian *schlumpen*, to be dirty'.
7   Hawkins and Allen (1991: 216) suggest that the word began as cant: '1. insincere pious or moral talk 2. ephemeral or fashionable catchwords 3. language peculiar to a class profession, sect, etc.; jargon'.

To others, of course, it was not the slum that made the people, but the people that made the slum. In Victorian London, 'in the more popular and influential literature of the day, it was character that was held to be responsible for the making of slums and, consequently, moral reformation that was advocated as the cure . . . The Irish were widely blamed for lowering housing standards and increasing overcrowding throughout central London' (Wohl, 1977: 9). The personality defects of the slum dweller are recognized in the OED's comment that only 'rarely' was the term used merely to describe 'a house materially unfit for human habitation'.

No doubt both interpretations are correct. Slums do contribute to making people's behaviour worse and some people's behaviour helps to produce slums. But what is critical is that so often slums and *all the people who live there* are tarred with the same brush. Slums and slum dwellers are viewed as constituting one undifferentiated problem with never a redeeming feature.

Was Godwin (1854: 2) not doing precisely this, when he observed: 'These densely-peopled clumps of houses, or "Rookeries" as they are called, are mostly inhabited by the poorest Irish lodging-house keepers, tramps, costermongers, thieves, and the lowest class of street-walkers'? Similarly, in a developing world context, was Stokes (1962: 188) not guilty of negative stereotyping when he argued that: 'the slum is the home of the poor and the stranger . . . These are the classes not (as yet) integrated into the life of the city'. Is Davis (2006: 178) not creating a similarly dangerous stereotype when he claims that: 'at the end of the day, the majority of the slum-dwelling laboring poor are truly and radically homeless in the contemporary international economy'?

The most worrying ingredient in most people's use of the word 'slum', therefore, is the survival of these wholly negative connotations. Slum dwellers are not just people living in poor housing; they are considered by others to be people with personal defects. In Brazil, a *favelado* is not just someone who lives in a *favela*, he or she is thought to be someone who deserves to live there.[8] *Favelados* have always been seen as people who are different; the maid who lives there may be decent but most *favelados* are not, the negative stereotype is fixed solidly into the middle-class Brazilian psyche. In Rio, the *favelas* are regarded locally as seedbeds of crime and the homes of drug gangs, and few outside anthropology departments recognize many virtues beyond the fact that some *favelas* also contain excellent samba schools (Perlman, 1976; Goldstein, 2003; da Silva, 2000).

The same gut reaction is true of the middle class in most other cities in the world. As Marris (1979: 419) points out: 'A slum is only a slum in the eyes of someone for whom it is an anomaly — a disruption of the urban form and relationships which to that observer seem appropriate to his or her own values and perceptions'. The fundamental

8 The word *favela* is confined in Brazilian usage to settlements founded through a land invasion and established by some kind of 'self-help' process, which are to be distinguished from *loteamentos* (subdivisions) and *cortiços* (tenements). Nevertheless, the word is used to translate the word 'slum' into Portuguese — for example the title of Mike Davis's book is translated as *Planeta Favela*. In Spanish America, the housing of the poor is called more or less that, *barrios bajos* (lower-class neighbourhoods) or increasingly and, more euphemistically, *barrios populares* (ordinary or working-class neighbourhoods). The only commonly used descriptors with really negative connotations used to be the adjective *marginal*, a term that now appears rarely in the academic literature, or *tugurio*. Generally, most cities have their own local terms for shantytowns, most of which are descriptive of the look of the poor settlements or of the way that they were formed. The 'pirate urbanization' of Bogotá refers to the illegal sale of land and is to be distinguished from the even more 'illicit' invasion (Gilbert, 1981). In Argentina, sympathy imbues the term *villa miseria*, used to describe flimsy invasion settlements. In Chile, the *callampa* (mushroom) describes how flimsy settlement grows over night, the *toma* (taking) to the invasion of land, and the *población* (settlement) of the ordinary poor is contrasted to the *campamento* (camp) founded in the late 1960s by the parties of the Left. In Spanish America, the central tenements also have their local names, *conventillos* (little convents because they are formed around a central patio), *inquilinatos*, *vecindades* — all associated with deterioration and over-crowding.

emotion that slums generate among non-slum dwellers is fear of the people who live there; a fear that stimulates demand for gated communities, hand guns and slum demolition.

Rather oddly, UN-Habitat (2003a: 9), while recognizing the prevalence of the stereotype, denies its importance. Although they accept that the 'catch-all term "slum" is loose and deprecatory' and 'is banned from many of the more sensitive, politically correct and academically rigorous lexicons', they choose to ignore this danger. Having defined a slum in the prologue as a place that is 'squalid, overcrowded and wretched', they then claim, somewhat ingenuously, that 'in developing countries, the term "slum", if it is used, mostly lacks the pejorative and divisive original connotation, and simply refers to lower-quality or informal housing'. Tell that to the slum dwellers of India or Pakistan, or the inhabitants of the *barrios* of Caracas or the informal settlements and townships of South Africa, and see what they say. In Rio, poor people claim that an address in a *favela* often means that they do not get a job (Leeds, 2007: 24). Even in Paris, 'discrimination is illegal, but *banlieue* residents routinely report that they are turned away once a potential employer spots an Arabic name or undesirable postal code' (Geary and Graff, 2005). As with the euphemism 'underclass': 'while it seems inoffensively technical on the surface, it hides within it all the moral opprobrium Americans have long felt towards those poor people who have been judged to be undeserving' (Gans, 1990: 273).

Slums are heterogeneous

Too many observers, including the UN and proselytizing authors like Davis and Verma, apply the term slum with broad strokes; it embraces any place that is problematic and any group of people that lives there is automatically included. Politicians, planners and the general public all tend to adopt the view that, if it looks like a duck, it must be a duck. All slums are bad and everyone living in them must suffer from the debilitating subculture that slum life produces. The term 'slum' is like the 'underclass' 'that lumps together a variety of highly diverse people who need different kinds of help' (Gans, 1990: 274).

In practice, most 'slums' are anything but homogenous and contain both a mixture of housing conditions and a wide diversity of people. That is why those academics, architects and planners who began to investigate the reality of life in the shantytowns in the 1950s found few Oscar Lewis type slums or slum dwellers (Abrams, 1964; Turner, 1965; 1967; Mangin, 1967; 1970; Portes, 1972; Cornelius, 1975; Koenigsberger, 1976). Life in these settlements was not as dismal as that described by Lewis in the central tenements of Mexico City or San Juan and many of these areas were clearly places that allowed people to gradually improve their lives. Turner (1969: 521) describes how studies of cities in seven countries discovered that: 'the peripheral settlers are almost always of a higher socio-economic status than central city slum or "provisional settlement" dwellers'. Based on his experience in Latin America, Mangin (1967: 65) noted that writers about squatter settlements in Latin America 'agree, sometimes to their own surprise, that it is difficult to describe squatter settlements as slums. The differentiation of squatter settlements from inner-city slums is, in fact, one of the first breaks from the widely shared mythology about them'.

Study after study during the 1960s and 1970s confirmed the fact that what might begin as a shantytown often developed into a serviced, consolidated, low-income suburb. The difference, according to Mangin (1970: xxix), was not about the people. 'The slum dwellers are basically the same kinds of people as the squatter settlement dwellers with regard to status characteristics. However, the slum dwellers do not view the future in the same way the people of the squatter settlements do. They exhibit more depression and alienation . . .' At this time, access to land, sufficient income to buy materials and sheer effort offered the poor a 'decent' home at least in the conceivable future. A terminological break-through came when Charles Stokes differentiated between 'slums of hope' and

'slums of despair'. This neatly summarized the growing consensus that poor-quality housing played a variety of roles and contained a great deal of heterogeneity. Stokes' (1962: 190) 'slums of "hope" disappear as migration slows down. Slums of "despair" do not disappear. For in the slums of "despair" live the poor'. If the word slum was still used, at least there were good slums and bad ones!

Thenceforth, most students of low-income areas in Latin America and Africa, although not generally in Asia, strenuously avoided the term slum. They replaced it with a gamut of terms, including informal housing, irregular settlement, spontaneous shelter and self-help housing (Abrams, 1964; Turner, 1965; 1967; Mangin, 1967; 1970; Portes, 1972; Cornelius, 1975; Koenigsberger, 1976). None of these terms managed to embrace the diversity of the settlements being described or the full range of processes involved, but each underlined an important dimension of the housing problem in poor countries: the reality was that people were essentially producing their own housing. People acquired land informally, sometimes illegally, and began to build, or at least design, their own accommodation. They lived initially without services but usually managed to improve the quality of their shelter over time and to use their home as part of a 'household survival strategy'. Providing that they earned enough money, and the government was vaguely competent, they were able to produce decent homes (Ward, 1976; Gilbert, 1992). Sometimes, the new terms used to describe the improving shantytowns were far too eulogistic, as when the new military government of Peru renamed its slums as 'young towns', but such a term at least had the advantage that the young towns were unlikely to be demolished by the state (Lloyd, 1981)![9]

In the past, I have argued that it matters not what term one uses to describe low-income settlements providing that the limitations of the term being employed are recognized (Gilbert, 1992). At the time, I favoured the use of the adjectives 'spontaneous', 'irregular' and 'self-help' in relation to housing but suggested that it did not much matter if other terms were used. However, I am certain that this argument does not apply to the term 'slum' for the reasons given in this article.

Later, of course, the automatic association between the inner city of dilapidation and the shantytown of improvement came to be questioned. In Mexico City, Eckstein (2000: 185) observed that, 'the shantytown that I came to know over a thirty-year period increasingly housed tenants who were poorer than the homeowners'. And, 'as local economic opportunities deteriorated, social problems proliferated. Drug addiction, violence, theft, and assault all increased with the austerity policies and peso devaluation of the 1990s' (*ibid.*: 187). 'Thus, the shantytown had come to be described more aptly as a "slum of despair" than a "slum of hope", the opposite of what urbanists had theorized'. Her observations are based on too limited a sample and on a misunderstanding of the role of tenure but her central argument is correct: what is a slum at one point in time may improve, what was once an area of hope may deteriorate. Quite simply, urban areas change through time; like many neighbourhoods in a city, some slums are gentrified, some formerly 'decent' areas decay.[10] If, as Flood (2002: 4) suggests, 'the reality of these unplanned settlements is quite different to the Western concept of slum, to the extent that "slum" may not be a meaningful description', using the term is at best misleading.

Has the heterogeneity of low-income settlement been recognized in the recent rediscovery of slums? Yes and no. The World Bank/UNCHS (2000: 1) recognizes that: 'Slums range from high density, squalid central city tenements to spontaneous squatter settlements without legal recognition or rights, sprawling at the edge of cities'. But, more worryingly, 'slums are neglected parts of cities where housing and living conditions are appallingly poor . . . Slums have various names . . . yet share the same miserable living conditions'.

9 Hernando de Soto (1989) wrote about the inhabitants as pioneers, the saviours of the Peruvian economy.

10 Perlman (2004) provides evidence about how certain areas in Rio de Janeiro have changed their character over 30 years.

Worse still, they declare that the urban situation is deteriorating unequivocally: 'In fact urban slum conditions are qualitatively and quantitatively worsening worldwide (World Bank/UNCHS, 2000: 9). This is part of the danger of the word and of campaigns generally. If you want to face up to the challenge of slums, you have to emphasize the worsening nature of the problem. Writers like Mike Davis are equally culpable in this regard. In the process, vast numbers of people are effectively labelled as 'undesirables'.

The paradox of providing solutions for an unachievable goal

If we take it at face value, the policy goal of the UN campaign is to reduce the number of slum dwellers by 2020 and hopefully to have eliminated it by some later date. But there is a major problem. In Victorian Britain, it is less than clear what proportion of the urban population lived in slums but, generally, the slum was perceived to be exceptional, the location of a minority, usually the undeserving and, not infrequently, the criminal. Normal housing was something other than a slum which meant that the anomaly could be 'treated'. Even though slums were relatively scarce in most developed countries, governments have never managed to rid us of our problem despite growing affluence and constant policy shifts. If that is reality in most developed countries, what chance is there in much less prosperous cities?

According to the UN's figures, slums in the cities of the South are no longer exceptional. Now that the term has been extended to the ill-serviced, flimsy accommodation of the periphery *most* urban Africans, Asians and Latin Americans live in slums. UN-Habitat (2003a: 15) estimates that 72% of urban dwellers in sub-Saharan Africa live in slums and 58% of those in South-Central Asia. Even Latin Americans cannot escape this fate because, seemingly, 'about two-thirds of the population of Mexico City live in what might be called a slum' (ibid.: xxix). Even more alarmingly, UN-Habitat (2003a: 81) estimates that, in 2001, 99.4% of the urban population of Ethiopia lived in slums and 98.5% of those in Afghanistan! In the urban areas of virtually all of the 49 least developed countries of the world the majority lived in slums.

On the basis of such figures, Davis (2006: 19) claims that: 'the cities of the future, rather than being made out of glass and steel as envisioned by earlier generations of urbanists, are instead largely constructed out of crude brick, straw, recycled plastic, cement blocks, and scrap wood. Instead of cities of light soaring toward heaven, much of the twenty-first century urban world squats in squalor, surrounded by pollution, excrement, and decay'. Even allowing for his rhetoric, if most people live in slums, what chance is there of improving life in the city? If all but 1 or 2% of the inhabitants of Addis Adaba or Kabul live in slums, how can the problem be treated, let alone solved?

Even if the initiative should prove successful in improving living conditions, slums will remain because as general housing standards rise, areas that fail to reach the new general standard will be newly categorized as slums. In the UK, rising expectations in terms of plumbing, damp courses and living space have turned many homes into slums that were once considered acceptable dwellings. I am all for raising standards but in the housing arena this tends to mean stigmatization of any housing that does not meet the new standards.

In the light of the enormous problem that needs to be tackled, one might expect policymakers to come up with relatively modest and realistic goals. If the problem is so large, then it cannot be solved; at best it can only be lessened.

To be fair to the 'cities without slums' initiative, the goal is not to rid the world of all slums by 2020. However, few politicians are so reasonable and far too many are wont to promise the electorate a happy future. Perhaps this is why the South African Housing Minister, Lindiwe Sisulu, announced in 2004 that the government would eliminate the housing backlog over the next 10 years (Peta, 2004). The policy of offering small subsidies to the poor and encouraging the mass building of small owner-occupied dwellings would soon solve South Africa's vast housing problem.

Similar kinds of utopian thinking produced Brasília and Ciudad Guyana and a host of lesser versions across the globe. These cities were intended to be islands of prosperity and modernism in seas of poverty. They were meant to be perfect and to demonstrate the future. Unfortunately, they could only achieve perfection if the poor of the country were kept out. The results were dualistic: perfectly decent planned cities with wholly imperfect, albeit distant, unplanned, neighbourhoods (Holston, 1989; Macdonald and Macdonald, 1979; Peattie, 1987; Wright and Turkienicz, 1988). Experience in London, Paris, Brasília, Rio de Janeiro and virtually every other city in the world shows us that the 'slum' will always be with us; the 'eternal slum' as Wohl (1977) once called it.

Encouraging the adoption of dangerous 'solutions'

In the past, the solution to the slum problem often amounted to one word: clearance. In hindsight, it is clear that demolition often only added to the problem. The main achievement of slum clearance in London and Paris in the nineteenth century was to increase overcrowding elsewhere. It did more to improve transport than to solve the housing problem. Baron Haussmann, after all, is remembered for his boulevards, not for his solution to the *taudis* of Paris.[11] The construction of railways and New Oxford Street in London worsened the housing situation rather than improving it.

When, immediately after the first world war, the British government promised its returning forces 'houses fit for heroes', that meant demolishing the slums and building new homes in the suburbs. The British new town movement and, later, high-rise flats represented the modernist epitome of this idea. The housing that existed was hopeless and only modern architecture and planning techniques could create proper homes. While some of these efforts did improve housing conditions, too often they brought little benefit to people's lives (see below).

Since 1945, few governments have lacked good, modernizing ministers who promised to remove slums and build 'proper homes' in their place. Unfortunately, few of these efforts proved very successful. As Van Kempen and Musterd (1991: 83) observe: 'In the Western world social high-rise housing has become the symbol of the deficiencies and failure of post-war public housing policies and management ... Apart from construction faults, failures and bad repairs, problems such as vacancies, rent arrears, a high turnover rate, filthiness, vandalism, feelings of insecurity and a high concentration of socially and economically weak families are supposed to characterize the occupancy and living conditions of these estates'. Taylor (1973) argues that, in the UK, much potentially decent terraced housing was reduced to rubble to produce the kinds of new social housing that was to prove so problematic. The construction of the *grands ensembles* on the edges of the large French cities seems to have proved no more successful. The first large estates were built on the periphery of Paris in 1953 and rapidly deteriorated. When 'riots occurred in Lyons in 1981 Mitterand set up a commission to deal with the more problematic estates. In the mid-1990s there were about 50 in the Île de France with an average population of 9,000' (Noin and White, 1997: 197–8). Despite changes in policy, the French *banlieues* have continued to explode, most recently in 2005.

In poor countries, past efforts at slum improvement too often led to displacement of the so-called beneficiaries. Supposedly benevolent leaders knocked down shanty accommodation in Caracas, Rio de Janeiro and Santiago and re-housed the population in purpose-built housing. The population were supposed to be happier as a result. And, 'since the 1970s it has become commonplace for governments everywhere to justify slum clearance as an indispensable means of fighting crime' (Davis, 2006: 111).

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11 *Harraps New Standard Dictionary* defines *un taudi* as a miserable room, dirty hole, hovel and suggest that it can be used as in les taudis de Paris. A *taud* is a rain awning or tarpaulin.

In practice, most observers have always concluded that slum removal has had negative effects (Marris, 1960; Dwyer, 1975; Perlman, 1976; Valladares, 1978; Rodríguez and Icaza, 1993: 68). Relocation disrupts existing commercial and social networks, lengthens the journey to work, raises housing costs and generally disrupts people's lives. Fortunately, the validity of Abrams' (1964: 126) famous jibe against slum demolition was gradually absorbed in many cities: 'In a housing famine there is nothing that slum clearance can accomplish that cannot be done more efficiently by an earthquake . . . Demolition without replacement intensifies overcrowding and increases shelter cost'. By the 1970s, the World Bank among others was pushing the dual concept of slum upgrading and sites and services (World Bank, 1974; 1980). Neither approach was perfect, but both represented a huge improvement on either clearance or the pretence of building perfect homes for imperfect people (Werlin, 1999).

Unfortunately, there are still many governments anxious to demolish slums. Indeed, Davis (2006: 99) claims that this is part of an international conspiracy. 'In big Third World cities, the coercive Panoptican role of "Haussman" is typically played by special-purpose development agencies; financed by offshore lenders like the World Bank and immune to local vetoes, their mandate is to clear, build, and defend islands of cyber-modernity amidst unmet urban needs and general underdevelopment' (Davis, 2006: 99). Whatever the truth of that assertion, slum clearance continues and, subsequent to the 'cities without slums' initiative, large-scale demolition projects have been initiated in India, Kenya and Zimbabwe (AHRC, 2003; STP, 2004; COHRE, 2005; 2007; Punwani, 2005). The Mugabe regime's recent efforts to 'clean up' its cities through Operation Murambatsvina may have led to 700,000 people 'losing their home, their sources of livelihood or both' (COHRE, 2005). Let me emphasize that the Cities Alliance is wholly against this approach and UN-Habitat is actively campaigning against it. Nevertheless, their wise advice to upgrade settlements and avoid demolition is clearly being ignored by some governments. I have no doubt that the slogan 'cities without slums' is partly to blame.

Meanwhile, more humane approaches to the 'slum' problem elsewhere are proving less than effective. In Colombia and South Africa, for example, many poor people are being given subsidies to buy formal homes. However, not only is construction failing to keep up with demand, but some of the beneficiaries have sold their new homes because they cannot afford to pay the associated taxes and service charges (Huchzermeyer, 2003; Gilbert, 2004). In Chile, the only Latin American country where the housing deficit has actually been cut in recent years (Gilbert, 2001), new subsidized housing estates have arguably turned into social housing ghettoes (Richards, 1995; Ducci, 1997). All three governments are determined to create nations of homeowners and to house the poor in 'proper' homes, despite their manifest inability to eliminate poverty. Metaphorically, the plan is to eliminate the slum, something akin to finding the Holy Grail.

Misunderstanding the central problem

The central dilemma facing housing improvement was understood many years ago. It was expressed in the Chairman of the London County Council Housing Committee's contentious questions: 'Does the slum make the slum dweller or the slum dweller the slum? Would someone who is "filthy in one room, be clean in two" ' (Barnes, 1926: 147)? An early test of the latter question was conducted in the late 1920s. McGonigle and Kirby's (1936) famous study compared the health and expenditure of a slum population in Stockton on Tees with that of a group that had been moved to modern housing.

> The results were dramatic. Although the estate to which the families moved was carefully planned and well-built, and the houses were fitted with a bath, kitchen range, ventilated food store, wash boiler and all the most modern sanitary arrangements, the death rate of the families increased by 46 per cent over what it had previously been in the slum area they left behind (Garside, 1988: 39).

The simple explanation was that in order to pay for their new housing the families were able to spend much less on food. Poor people need cheap accommodation. If cheap accommodation is not available, they become homeless or they spend too much on housing. There is a conflict between improving the physical quality of housing and improving the housing conditions of poor people.

Arguably, social housing programmes in many developed countries solved that problem by heavily subsidizing the poor. However, the problems currently faced by the ageing council estates in the UK suggest that this policy has not always worked. Similarly, the social situation in the *grands ensembles* of urban France show that 'the marginalization of these estates is in reality more social and cultural than physical' (Noin and White, 1997: 197–8). High levels of unemployment, poor education and racial segregation sometimes combine to create new slums.

In poorer environments, Turner (1976) points out, little purpose is served in providing a poor family with a fully serviced, three-bedroom house if the family cannot afford the rent or mortgage payment. He once compared the housing situations of two families, one living in formal accommodation, the other, a rag picker, in a shack in the backyard of his godparent. While the living conditions of the first family were clearly far superior to those of the second, the housing expenditure of the first was far more than they could afford. Turner argued that given the circumstances of the two families at the time, the flimsy shack offered more appropriate accommodation than the three-bedroom house.

Similarly, as Marris (1979: 424) points out: 'Squalid housing, crime, ignorance and poverty come to be seen as a mutually reinforcing constellation of circumstances independent of the economic relationships which cause them. And this leads to another myth: that improvements in housing can abate other, more fundamental inequalities'. As such, 'Projects of slum clearance, site and service schemes, and model housing are too marginal to influence substantially either the flow of investment or the pattern of settlement and so, for the most part, are manipulated by the forces they seek to control' (*ibid.*: 440).

In cities with abject poverty, housing improvements can be counterproductive insofar as the priorities of the desperately poor almost always lie beyond shelter. Above all else, the poor need to eat and to drink clean water. Overcrowding is clearly undesirable but hunger is worse!

Conclusion

One of the aims of UN-Habitat is to draw attention to an extremely worrying and possibly growing symptom of urban poverty. As its executive director puts it: 'Awareness of the magnitude of slums in the world is the key' (UN-Habitat, 2003a: 1). Campaigns against poor housing are to be welcomed, but such campaigns have to demonstrate that they can really improve living conditions. If the 'cities without slums' campaign manages 'by 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers', we should celebrate. We should also praise the campaign insofar as it espouses upgrading projects rather than slum clearance.

At the same time, I fear that that by using the term 'slum', the campaign's main goal becomes blurred and obscures the real steps that need to be taken to improve living conditions. If the key problem to be addressed is to improve the quality of people's housing, then a campaign entitled 'In search of better shelter' would be much more accurate and honest. Most importantly, it would represent a reasonable goal and would not convey the negative images evoked by the use of the word 'slum'. 'Better shelter' suggests a progression: that housing problems are so complicated and deep seated that they cannot easily be resolved, let alone eliminated. Improving shelter does not demand the end of 'slums', which is unachievable, but to produce better housing conditions,

which is. The danger with the term 'cities without slums' is that it is just a slogan; rhetoric that carries with it an empty promise.

What worries me too is that use of the word slum will recreate many of the old stereotypes about poor people that years of careful research has discredited. By using an emotive word, the UN draws attention to a real problem but, in doing so, it evokes a response that it cannot control. As Gans (1990: 275) points out in his condemnation of the term 'underclass', if the term 'is turned into a synonym for the undeserving poor, the political conditions for reinstituting effective antipoverty policy are removed'. The very word 'slum' confuses the physical problem of poor quality housing with the characteristics of the people living there. And, with so many unscrupulous governments in power around the world, the stereotype may be used to justify programmes of slum clearance. After all, how better to create cities without slums than by obliterating the eyesores?

Perhaps 'cities without slums' is just another mistaken attempt to create utopia in the middle of an imperfect world? Or, is it a way of masking the 'problem of warehousing this century's surplus humanity' and of preventing the 'great slums . . . waiting to erupt' (Davis, 2006: 201)? My own view is less Machiavellian, that it is the unfortunate result of a combination of genuine altruism and bureaucratic opportunism. After all, UN agencies need to justify their existence and this is one reason why in recent years their publications have appeared more frequently, the production glossier and the titles sexier. Other UN organizations and NGOs are putting different issues at the forefront of the global agenda so each must use the headlines to compete for funds. In that respect, the 'cities without slums' campaign is a sign of our times, it is a victory for the banner headline and for tabloid thinking. This is dumbing down and, worse, it is an invitation to look for instant solutions that will help no one, especially the newly stereotyped 'slum' dwellers.

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Résumé

L'initiative 'Villes sans taudis' a ressuscité un terme ancien et dangereux du vocabulaire de l'habitat. Utiliser le mot 'taudis' va recréer toute une mythologie sur les pauvres que des années de recherches consciencieuses avaient réfutée. L'ONU a fait ce choix pour souligner la gravité des problèmes urbains et renforcer sa capacité à attirer des fonds avec lesquels résoudre la question. Cependant, ce mot étant connoté émotionnellement, l'ONU risque d'ouvrir une boîte de Pandore. La campagne implique que les villes peuvent réellement se débarrasser des taudis, ce qui est totalement irréalisable. Le mot est dangereux aussi parce qu'il mélange le problème matériel de la piètre qualité des logements et les caractéristiques des populations qui y vivent. L'ONU sait que des études antérieures ont réhabilité la plupart des 'habitants de taudis', mais elle ignore le risque lié à l'évocation des vieilles images. Parallèlement, la compagne invite indirectement les gouvernements à trouver des solutions immédiates à des problèmes insolubles. Les gouvernements démagogues se sont toujours montrés disposés à démolir les taudis même si l'expérience a prouvé l'inefficacité de cette politique. Je crains que cette nouvelle campagne n'en encourage d'autres à appliquer cette stratégie insensée. Il faut employer les mots avec circonspection.

The Writing of the Social Sciences

Sundar Sarukkai*

Doing sociology, writing sociology, is to somehow engage with the subjects of the discourse, to give voice to these subjects. It perforce means that our writing should be sensitive to these voices. Literature does this admirably well in one way. Social science can still see itself as a science but that does not mean that it can without question make its writing scientific. It does not also not have to make its writing entirely literary. The challenge thus is to find expressions of literary social sciences, where there are some elements of the discourse of the natural sciences as well as some from the literary discourse.

This is an introduction to the series of articles by students of a graduate level course taught by the author on 'The Nature and Practice of Thinking' at the National Institute of Advanced Studies, Bangalore. As part of this course, the class studied different writing styles ranging from poetry to critical essays. The series that follows represents one attempt to find a different voice to talk about some important themes in social science.

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There is a peculiar metaphysics that haunts the writing and the analysis of writing in the social sciences. On the one hand writing in these disciplines follows the dictates of representation – of social facts and processes, for example. On the other, writing itself is participatory and co-constitutive of the content of these discourses. Thus, at one end such writing gravitates towards the specific registers present in the writing of the natural science discourse and at the other it is seduced by literature.

One of the important ways through which a discourse marks out its territory is through writing styles and practices. Most often we make sense of such writing by unduly focusing on the content of what is written. To invoke an old binary, what is focused in such acts is the content as against the form. Form is regimentalised in various ways in such writing. Academic writing in social sciences takes very distinctive forms. Among other things, some of the folk complaints are that they are often difficult to read, exhibit excessive scholarship and treat new ideas and insights with a great deal of reserve. At the level of writing, it is often clear as to what constitutes academic writing in social sciences. Often one can guess the journal in which an article is published by looking at the style of writing.

However, it is clear that we need to engage more seriously with the practices of writing in these disciplines. All the sciences, both natural and social, exhibit a deep suspicion of writing, a suspicion that has different modes of articulation in the wider philosophical terrain. The suspicion of writing is basically based on the fact that writing is derivative – not necessarily of speech as Derrida would have it, but derivative of the nature of the surrounding domain of discourse with which each of these disciplines engage. For the natural sciences, writing is derivative to the way the world really is; thus, scientific writing can only write the already 'written' articulations of nature.

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It is not an accident, therefore, that among scientists the scientific activity is often seen as reading the book of nature. A deeper understanding of this metaphor makes us realize that science is as much writing the reading of this book, that is, writing the already

written. Writing in this sense is completely derivative and in fact the very responsibility of being called a science is to *regulate writing*. A scientist cannot write what she wants; she has to write only what the world exhibits to her intellect.

The appropriation of the idea of science into social science is not at the level of methodology alone. Nor is it only of the metaphysical presuppositions hidden in the very act of doing science. It is also in the way in which discursive strategies from natural sciences are appropriated into the writing of the social sciences. The reason why this appropriation has not merited the kind of attention it should have is primarily due to the belief that scientific discourse is merely communicative and has no specific discursive strategies special to that discourse. But by now it is accepted that scientific discourse not only exhibits special registers but also that the discourse is essential to the production of scientific knowledge. In other words, how science is written is essential to the epistemology and ontology it creates.

There is one aspect of scientific writing that has had a profound influence on the social sciences. This has to do with the use of mathematics in these disciplines. At the expense of other discursive strategies, social science has focused excessive attention on the use of mathematics in the natural sciences and the potential use of it in the social sciences. The natural sciences, particularly physics and chemistry, have co-opted mathematics in a very special way. They do not claim that the use of mathematics is part of the discursive strategy of science. Instead, the claim is that mathematics is the language of nature and thus the use of mathematics is validated at the level of faithful representation of the world. It is not just that nature is an open book but it is a book written in the language of mathematics.[ii] Since mathematics is the language of nature, scientific texts have to perforce be written in this language so as to retain some notion of faithfulness.

This particular view of nature's relation with mathematics negates any possibility of understanding the use of mathematics as a discursive strategy in the natural sciences. One way to recapture this lost engagement with mathematics is to explicitly understand it along the contours of language and its relation with scientific discourse. Once we do this it will become clear that there is much in the use of mathematics that is part of discursive strategies and the use is not necessarily only at the level of methodology or metaphysics. Along with particular ways of using mathematics, science also deploys various other discursive strategies such as the use of multisemiotic systems, rhetorical strategies, specific kinds of registers, emphasis on nouns at the expense of verbs and adjectives (grammatical metaphors) and so on.[iii]

One reason why science chooses these strategies of writing is because of its attempts to distance itself from literary writing. The attempts to put a chasm between science and other activities such as religion, literature and philosophy have influenced not only its methodology but also the way it presents itself through its texts. Contrary to literature, science privileges the possibility of reading texts with one or few interpretations. To allow for this possibility the text itself has to undergo radical changes. While the methodological issues that distinguish science from literature are often emphasized it is not often the case that such clear demarcations can be made. For example, literature too engages with the real in very important ways as much as science engages with the idea of the fictional. Science refines the idea of justification in ways quite different from literature and the arts, although one could in principle argue that

there are various modes of justification present in the latter, such as form and aesthetics. Science's attempt to draw a line between philosophy and science also runs into problems when analysed carefully. Much of modern science is a careful cultivation of the removal of the weeds of metaphysics. This weeding out is particularly and perhaps only to be found in its writing, for scientific practice is filled with the pitfalls of metaphysics at all levels. Somehow writing has to carry the burden, one which allows science to distinguish itself from fields such as literature, arts and religion.

If that be the case, then what happens when social science appropriates science – not just its methodology and perhaps its metaphysics but also its writing strategies? In the case of the social sciences, their relation with literature is much more immediate than is the case with the natural sciences (although one could make the argument that scientific narrative is a story of how the world is and sociology, for example, a story of particular aspects of human societies.) It is well known that social science arose as an intermediate point between science and literature. As Lepenies notes, from the 'middle of the nineteenth century onwards literature and sociology contested with one another', whose 'consequences are still visible today.' Even by the 'end of the eighteenth century a sharp division between the modes of production of literary and of scientific works was not yet possible.'[iv]

Literature and social sciences go a long way back. Literary styles of writing have not only influenced the social sciences but also the natural sciences. For example, Halliday points out that Newton chose a specific register in writing his work on optics.[v] This marks a specific shift away from certain literary styles of writing, a shift that has been very influential in the writing of science that followed. In the social sciences, this tension between these disciplines and literature persisted until the nineteenth century. This should not be too surprising since social sciences found a disciplinary identity following Comte in the nineteenth century. One of the primary reasons for this constant tension between literature and social sciences lies in the fact that the objects of discourse in both these disciplines overlap. Literature writes about society and in doing so constantly challenges the claims of sociology. Even today, some of the most important ideas about societies reach people through the medium of literature rather than of sociology or anthropology. While methodology and rigour do indeed mark a difference between fiction and sociology it is also the case that literature – both in its fictional and non-fictional form – many times intrudes into the domain carved out by disciplines such as sociology, history, anthropology and culture studies, to cite a few examples.

The conscious attempt by social sciences to mimic the discursive strategies of natural sciences meant that the style of writing was used to create a demarcation criterion to distinguish the social sciences from literature. But such uses of writing are not 'innocent' nor can it be believed that they do not have important consequences. For, in choosing writing styles to carry the burden of demarcation, to establish the boundaries of exclusion, these disciplines invest enormous power in the activity of writing, a power which they would rather not grant them consciously. A dominant belief about language and writing that has informed such writing rests on the view that language is derivative. Derrida's argument that writing has always been viewed as secondary to speech arises from his reading of some of the most important thinkers of the western tradition who betrayed such a belief about writing, primarily with respect to speech. Writing was thus seen to be twice removed, a representation (of speech) which itself is a representation of

ideas/thought. Being thus removed, writing was viewed with a great degree of suspicion, a suspicion which Derrida well recovers under the term 'metaphysics of presence'.

The sciences, both natural and social, join hands in negating the power of writing and the ways by which writing co-constitutes their epistemology and ontology. By using writing as entirely derivative of either speech or intellect or representing a reality of nature or society they are only doing disservice to the ways by which writing is used and can be used more effectively. This suspicion of writing has its seeds in the suspicion of language itself. The inherent tension between language and reality arises from the simple observation that both of them seem to be distinctly two different kinds of entities. Reality of the world or society has to do with some notion of concrete reality. Whereas language, in spite of some theories that posit reality to language, is dominantly seen to be about reality and in itself does not constitute the real in the way objects do. And if reality and its faithful description becomes the concern for the sciences, then language has to be constantly questioned and regulated. This is a fair enough strategy if language indeed is the way it is commonly thought to be. However, there are enough reasons to question this naïve view of language.

Ironically, I believe that the natural sciences, in spite of their suspicion towards natural languages, have actually engaged with language in much more complex ways as compared to other disciplines. The emphasis on multisemiotic systems is one such manifestation. Whereas, social sciences, in their mainstream version, having appropriated the metaphysics of writing from the natural sciences, are still stuck with problematic conceptions of language. Ironically, they have not found ways to engage with language like the natural sciences have. Not only did the social sciences first appropriate styles of writing but later on they also appropriated the use of mathematics without worrying about why such linguistic turns were adopted in the natural sciences in the first place. For example, would the social scientists accept a variation of the statement that nature is written in the language of mathematics to say that society is written in the language of mathematics?

Thus, social science has lost out significantly in these appropriations. The natural sciences moved to a richer engagement with language suitable for their needs. What social sciences should do is to introspect on similar lines to discover the appropriate engagement with language that they need to have. Neither the academic style nor the blind use of mathematics is going to do the job. The first engagement that the social sciences have to do with language is to go back to the origins. Going back to the origins is to reconsider the intrinsic relation between literature and the social sciences.

How do we recapture the literary in the social sciences? One way to do this is to be very conscious of the mechanics of writing. This also means to resist the usual modes of communication, those that have been validated as academic writing. However important this writing is, the point that we need to remember here is that there has to be self-conscious awareness on why the social sciences need to be written in that manner and what such writing does to the content of the disciplines.

The engagement with the literary within the sciences is not new. One particular engagement is the writing of popular science. But the challenge posed to the academic community is whether it is possible to have serious, rigorous analysis in written styles that seem a little less constructed and constricted. After all, one could argue that much of what is written about in the social science, in contrast to the natural sciences, engages

with human lives and such lives are not to be written about entirely as objects of the world such as the sun and the moon. Doing sociology, writing sociology, is to somehow engage with the subjects of the discourse, to give voice to these subjects. It perforce means that our writing should be sensitive to these voices. Literature does this admirably well in one way. Social science can still see itself as a science but that does not mean that it can without question make its writing scientific. It does not also not have to make its writing entirely literary. The challenge thus is to find expressions of literary social sciences, where there are some elements of the discourse of the natural sciences as well as some from the literary discourse.

The following series of articles is one attempt to find a different voice to talk about some important themes in social science. They were pieces submitted as part of an assignment for a graduate level course which I taught on 'The Nature and Practice of Thinking' at the National Institute of Advanced Studies, Bangalore. As part of this course, we studied different writing styles ranging from poetry to critical essays. The literary style in which these particular pieces are written are inspired from the *New Yorker* 'style'. As part of the course, we studied articles from the *New Yorker* to see what makes their style seem somehow distinct from other writings on similar topics. There are, of course, no clear rules which informs us that the *New Yorker* wants its pieces written in particular styles but as careful readers we can see the patterns that emerge in such close reading.

Based on this exercise, I asked the PhD students to write about a theme of their work in this style or in a style that is somehow inspired by it. The following four pieces were chosen finally for this section in the *esocialsciences*. Each of them deals with an interesting theme ranging from tribal art and the current fascination with it in the international art market, the impact of IT service industry traced through the story of an individual going for an interview, the impact of rain in a desert – not necessarily all that welcome, and a dilemma posed by one disciple of Kant to him about morality and the difficulty in relating individual decision to larger philosophical theories on morality. These pieces have been edited and reworked more than once in order to conform to some common stylistic standard. We hope that such writing will be taken up with enthusiasm by other students as well as professionals. It is social science as a discipline which will be enriched by being self-conscious about writing and being open to experiments in writing styles to communicate/express/create new ideas in these disciplines.
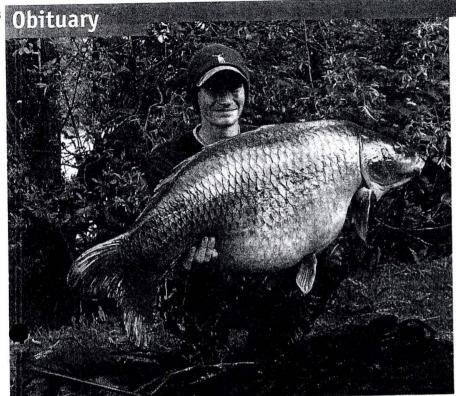
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[i] For more on this, see Sarukkai, S. *Translating the World: Science and Language*. Lanham: University Press of America, 2002.
[ii] Scientists such as Galileo, Newton, Einstein, Feynman and others have often voiced this view.
[iii] See *Translating the World: Science and Language*, op cit.
[iv] See W. Lepenies. *Between Literature and Science: The Rise of Sociology*. Cambridge: Cambridge University Press, 1998.
[v] Halliday, M. A. K. "On the language of physical science." In *Registers of Written English*, ed. M. Ghadessy. London: Pinter Publishers, 1988.

Benson

Benson, England's best-loved fish, died on July 29th, aged about 25

PETERBOROUGH, in the English Midlands, is a red-brick town, best known as the midway point on the line between King's Cross and York. But from the bottom of Kingfisher Lake, just outside it, urban toil seems far away. There, all is most delightful silt and slime. A push of your probing nose sends up puffs and clouds of fine] through the water. A riff of bubbles ݜses, silvery, towards the surface. The green reeds quiver, and sunlight ripples down almost to the depths where you are lurking, plump and still.

Such was mostly the life, and such was the address, of Benson, England's most famous fish. Her actual place of birth, as a wriggling, transparent fry prey to every frog, pike and heron, was never known. But at ten, when she was stocked in Kingfisher, she was already a bruiser. And there, among the willow-shaded banks, she grew. And grew. At her peak weight, in 2006, she was 64lb 2oz (29kg), and was almost circular, like a puffed-up plaice. Bigger carp have been seen in Thailand and in France; but she still amounted to a lot of gefilte fish.

In her glory days she reminded some of Marilyn Monroe, others of Raquel Welch. She was lither than either as she cruised through the water-weed, a lazy twist of gold. Her gleaming scales, said one fan, were as perfect as if they had been painted on. Some wag had named her after a small black hole in her dorsal fin which looked, to him, like a cigarette burn. It was as beautiful and distinctive as a mole on an 18th-century belle. Her lips were full, sultry or sulking, her expression unblinking; she seldom smiled. Yet the reeds held fond memories of her friend Hedges, her companion in slinky swimming until she, or he, was carried away in 1998 by the waters of the River Nene.

Abandoned, she ate more. She devoured everything. Worms, plankton, crayfish, lily roots, disappeared down her toothed, capacious throat. She was a one-fish Hoover, motoring through the food-packed sludge and through rich layers of sedimentary smells. But she was offered daintier and more exotic fare. Cubes of cheese, scraps of luncheon meat, bread crusts, Peperami, dog biscuits and tutti-frutti balls all came down invitingly through the water. She sampled most of them.

Of course, she was not fool enough to think they came from heaven. Carp are cunning, a very fox of the river, as Izaak Walton said. She could see the lines, and at the end of them the trembling shadows of Bert, or Mike, or Stan, spending an idle Sunday away from the wife with a brolly and a can of beer. Often she continued to lurk, roiling the mud to conceal herself and basking in her own scaled beauty, as carp will. On hot days she would rise to the surface, glowing and tantalising, with a lily-leaf shading her like a parasol. She played hard-to-get, or the One That Got Away, nudging the line before drifting down towards the dark serene. But then, just for the hell of it, she would take the bait.

The first hookings hurt like hell, the whole weight of her body tearing her tongue like a razor blade. But over the years she got used to it, and her leathery mouth would seize the bait as a prize. Hauled to the limelight, she was admirably un-phased. This was, after all, the homage beauty was owed. She would submit to the scales and then pose for the photographer, unmoving, holding her breath. She had her picture taken with Tony, owner of her lake, who confessed to the *Wall Street Journal* that he had "quite a rapport" with her; with Ray, who caught her at two in the morning, disturbing her beauty sleep; with Matt, of the shy smile and the woolly hat; with bearded Kyle, for whom she looked especially dark and pouting; and with Steve, who ungallantly told *Peterborough Today* that she felt like "a sack of potatoes" and was "available to everyone". She was not, but at least 50 others held her, or gripped her, for a moment or so. Uncomplainingly, she nestled in their arms before she was lowered to her element again.

These men had a knowledgeable air about them. They might have been a secret society, meeting at odd hours in hidden nooks around the lake. Each had his spot for anoracked meditation. When they spoke, it was of wagglers and clips, spods and backbiters, size 14s and number 8 elastic. Dates and weights were bandied about, an arcane code. For a while, Benson imbibed the philosophy of a gaudier and more complex sphere, heard the tinny music of their radios and stared into the dazzle of the day. There was much that she herself might have imparted, of the mystery of reflected and inverted things. But her anglers needed to get home to the football and their tea.

The fatal nut

Greed probably undid her in the end. She was said to have taken a bait of uncooked tiger nuts, which swelled inside her until she floated upwards. Telltale empty paper bags were found on the bank of the river. Or she may have been pregnant, with 300,000 eggs causing complications, or stressed after so much catching and releasing, those constant brushes with extinction. On the line between life and death, at Kingfisher Lake, she breathed the fatal air and did not sink again. And there she lay, like Wisdom drawn up from the deep: as golden, and as quiet. ∎

The Offshored World

Sahana Udupa*

There has been a clear change in the cultural milieu of the IT city Bangalore in the last few years. And while this may not be only due to the call centres that have sprouted providing high-paying jobs to thousands of young people, they are certainly a significant influence.

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It is one of those cool mornings in the IT city of Bangalore. On the sprawling Palace Grounds, located in the heart of the city, more than 2000 young men and women have gathered. With colourful files clutched safely in their palms, the young men and women have formed long queues in front of make-shift cardboard tents. They call the tents 'pavilions'. On this day, there are two large pavilions separated by a carpet-laden pathway. The right pavilion displays a bold placard saying, "IT". The left pavilion is named "ITES". The teeming adolescents outside these pavilions are buying tickets to gain entry into the pavilions. The entry fee is an affordable 30 Indian rupees.

The Palace Grounds is the permanent venue for the prestigious IT dotcom festival that showcases and flaunts Bangalore's global IT success. However, this event is different from IT dotcom. Titled "

'Career Expo', it is an event that aims to attract, locate and recruit deserving graduates from the surrounding colleges for thousands of vacancies waiting to be filled up both in Information Technology and Information Technology Enabled Services industries. "It is a job fair," declares an organizer.

Abbas, a sturdy man in his late 20s, is standing in one of the serpentine queues, waiting for his turn to buy the entry ticket. With a leather bag held firmly in his hands, Abbas looks especially business-like today. His clean-shaven cheeks sport a smile once in a while. His eyes speak of some eagerness. Every move he makes in the 7-inch circle of his existence in the rushing queue, declares this enthusiasm. He is sure of getting a job today. After all, there are so many jobs in the offing. He does not understand why people around him look so anxious. Patting the back of a little chap in front of him who fumbles with the currency notes at the counter, Abbas exclaims, "Long live Uncle Sam, the provider of all our jobs!"

Though it is still ten in the morning, Snehalatha finds it hard to sleep. Her pick-up vehicle is going to arrive at noon. She can certainly afford to sleep for another hour. She knows she *has* to sleep for another hour. For, she is not sure how long her working day/night would be. Her shift begins at two in the afternoon and stretches well into the wee hours of the next day. The traffic on the narrow lane sliding along the compound wall of her little house is maddening. Her house is located in Thyagarajnagar, a lower-middle class neighbourhood barely five miles from the central business district. The shanty houses perched on the sides of the narrow lane almost fall on the bitumen coated tarred roads. Cement sheets are drawn across the roofs of some houses, while most others – the

wealthier ones – have thick concrete canopies. Snehalatha's house is one of the wealthier ones.

The two-bedroom house uses every inch of the space allotted by the civic authority. There is barely any room between the main door and the compound wall. The floor inside is red, the walls are faint yellow. Snehalatha's room is on the left of the drawing room, overlooking the lane. She hates to sleep in this room. It is bright and noisy. The sun disdainfully enters her room as early as 7 in the morning. "How unfair," Sneha grumbles. "Only if sun wakes up after I do! I cannot sleep if it is too sunny. I draw the blinds and plug every hole that gets the sun into my bed. But the sun is notorious. Maybe I am asking for too much, sun cannot wait till 12 anyways!"

She cannot sleep in the other bedroom either. Though it is darker, her little sister and mother sleep in that room. Her father sleeps in the living room. They are all up and ready to go to work. Sneha's father does some menial jobs in a nearby factory. Her mother is a schoolteacher. Her sister is still a college student. The family income had till recently been relying heavily on her mother. For all practical purposes, she was the matriarch of the family.

The family dynamics changed two years ago, when Sneha picked up a job in a call centre. Her income overshot everyone else's. The tens gave way to thousands. The pay packet exceeded the limits of their very imagination. It became hard to disobey Sneha, leave alone ignoring her wishes.

Abbas knows the benefits of a call centre job. It will bring him wades of currency notes to splurge with, loads of cigars to smoke away, and the hunky looking teens to brush his body and spirit. He only has to strike the right deal with the right company. "I know what I want," he says assuredly.

There is a sense of urgency around Abbas. People are hurriedly buying the tickets, rushing into the transient tents of different IT and ITES companies, and making enquiries feverishly. The representatives of the companies are zipping away the forms, beckoning the bright bachelors. "Its going out of control," gasps a woman. Her lipstick is fading with exhaustion; sweat trickling down her greasy chin. The loose T-shirt, displaying the name of the company she works for, is sticking to her sweaty bosom. Some bright bachelors cannot help breeze their eyes through it. "Am I qualified, I have a bachelors in arts," screeches a tiny woman. "What's the kind of work? Should I take calls?" asks a bespectacled boy.

Their voices are hardly audible in the cacophony of myriad sounds leaking out of the surrounding cubicles. The sounds are loud invitations to the gathered youth – the loudest of all could be the winner. As though to mask the crunching competition between them, companies have put up game shows with a lure of expensive prizes to attract aspiring candidates towards them. America Online has begun a quiz contest. One of their representatives shouts the questions in the mike and guarantees the winners a profitable journey with AOL. A rival company has an elegant mirror hung on the walls of its stall with writing above it saying, "The most wanted candidate". The stalls, painted in bright colours, proudly display the company logos. There are attractions galore. Each stall is unique in its own right. Each has its agenda clearly set out. Each needs the best of all candidates.

Abbas has weighed his options carefully. He is inching towards 'Divergys', a Bangalore based call centre mostly serving clients in the US and the UK. Abbas knows nothing about their clients or about their official paraphernalia. "I have a gut feeling that this is the right company," he murmurs. A heavyset woman with a face round and clear, and hair reaching only her shoulders, hands out a long book to Abbas. "Write your name and address," she orders mechanically. There are several candidates writing their names carefully on the long book. Abbas strikes conversation with one of the lankier chaps and boasts about his bright prospects. The lanky chap doesn't look happy. "I was rejected by ICICI One Source," he says dejectedly. "They said I have a strong MTI."

Mother Tongue Influence – or MTI as is commonly referred to in voice-based BPO industries – is an irritating obstacle to most Indians. Their English accent bears a 'pungent odour' of their native languages. There are 27 official languages in India with more than 135 dialects. English is mostly taught as a second language. Even when the medium of instruction is English, most students catch the MTI virus unknowingly. In other industries, perhaps, this is not a grave defect. In voice-based BPO industry, it certainly is. Indian call centre workers should be able to effectively converse with American callers. Their accent, diction, pace and intonation should resemble, if not completely match, their American clients. Call centre companies are undoubtedly worried about MTI. The available pool of candidates shrinks further with the ubiquitous pest of MTI. As the available pool is limited, companies do not look for a complete MTI-free English. They are content with curable accents. Companies design and deploy elaborate training programs to do away with MTI, some have employed neurologists to tackle the 'MTI menace'. "People in India unconsciously translate everything from their genetic language to mother tongue to English. This creates a neurological block that creates problems in his work in the call centre. This may be in terms of how he talks, how he deals with the customer. I know of a Malayalam speaker (a South Indian language). He thinks in his genetic language. The muscle control for each language is different, the movements that control speech pattern, from the lungs to the tongue and mouth are determined by your genetic language," explains Dr.Topaz, consultant neurologist and psychiatrist at America Online's Bangalore call centre. "Language ability is genetically influenced," he asserts. At AOL, he remedies this deficiency by 'restoring' neural connectivity to make the muscles (for speech) respond to the brain.

Abbas too is concerned about his MTI. He is tensed about what he perceives to be recognizable MTI in his speech. He is well trained in Arabic, but does not want to recall it now. "I don't want to learn too much Arabic. Because my English accent gets affected. I will be kicked out of call centres if I allow it to happen," he says anxiously. To his shock, inside the stall of Divergys, many candidates were being sent back on the grounds of irrecoverable MTI. He would not want to miss the precious opportunity of getting into a multinational company, especially after waiting for well over 45 minutes amidst swarming rush of people, bearing their breath and sweat. He says he has his fingers crossed.

It is an easy sail for Abbas in the first three rounds of filtering. In the first round, a Divergys representative – with an air of careful indifference about her – asks people with less than 15 years of formal education to leave the tent. About five young men and women walk out immediately. This condition is non-negotiable. Abbas has no problems with this. In fact his problem is of a different kind. "I think I am overqualified for a call

centre job. I have an MBA. I am not displaying my MBA certificate. They may think I am overqualified and send me away. I will show certificates only up to my undergraduate degree," he reveals. Abbas knows the rule of the game. He has approached at least 3 companies before deciding to come to the job fair. "I am now a veteran job hunter!" he brags.

The second round turns out to be equally plain sailing. The lady wants to know why the bright young men and women gathered in the tent want to join a call centre. The bespectacled, school-boyish guy next to Abbas rehearses his lines before the lady arrives before him. As soon as she comes, he blurts, "I want to join a call centre because it is a good stop-gap arrangement." The lady is not amused. In fact she looks annoyed.

Call centre companies in India spend huge sums of money to train the new recruits and finally assimilate them into the process mode. "It is an immense responsibility. The company takes care of the employees from recruitment to retirement. From cradle to grave," states Sriharsha Achar, Director of Human Resources Department at AOL Bangalore. On an average, companies spend nearly $2000 on every employee for hiring, induction and training. If an employee stays with the company for 270 days, all the money spent on training and induction is recovered. If the stay is shorter than 9 months, the company fails to achieve ROI – return on investment. "The industry is 'facing a lot of flux'. It is a challenge for every company to increase the longevity of employees in the organization," explains Achar. Attrition in some call centres has reached 100 percent. It is sometimes called revolving-door-attrition.

The bespectacled guy next to Abbas certainly didn't stand a chance. Call centres do not need people who would see it as just a stopgap arrangement. Although most of the candidates who approach them do indeed think of it as a temporary arrangement, not many would be as tactless as to declare it before the hiring authority. Abbas prides about his knowledge on the industry. He should never disclose his true intentions. When the lady approached Abbas, he is ready with a correct response. Not surprisingly, he is cleared for the next round.

By now the tent looks half empty. Most of them have either given a wrong reply to the lady's probing questions or have had a degree in engineering. Engineering degree holders are often turned away, as the call centres suspect them to not stay beyond a month or two. Abbas neither has an engineering degree – for all practical purposes he is only an undergraduate – nor is he tactless. He is qualified to read a paragraph before the company representatives in the third round of filtering. This round will crudely assess the pronunciation potential of job aspirants – whether they can be moulded to 'neutralized accent' at all. Despite his anxieties, Abbas clears the round.

Abbas, along with 10 others, is now the hunted few. They are made to stand at the corner of the stall, while a new batch of about 40 people rush into the Divergys tent to get filtered in. The hunted few should now be ferried to Divergys head quarters in South Bangalore, the hotbed of all IT activities. They should undergo more rounds of filtering, although most of them are clueless about what it would entail. They are quickly whisked away in a luxurious jeep, lest the chosen few get tempted to take interviews with other companies in the job fair.

The distance between Palace Grounds and Divergys head quarters is hardly 9 miles. But it takes not less than one hour in car even during the off-peak hours. The exploding vehicular count has lent the narrow, circular roads of the city almost incompetent. Bangalore has abruptly burgeoned into a global IT city. "Bangalore is bursting at its seams," warn a number of local newspapers.

It is the fifth largest city in India and the fastest growing city in Asia. Its population has increased by 61% in the last decade. With 6.5 million people, Bangalore is buckling under the weight of its fledging population. The number of motor vehicles plying on the roads of Bangalore has increased from 0.2 million to 2.4 million in the last two decades. There are 1.5 million two wheelers and 0.3 million cars. These figures do not include the floating vehicle population. About 88% of Bangalore's vehicles are personally owned. Most 'Bangaloreans', especially the white-collar crowd, sees public transport system as largely unreliable. Every working day, around 900 new vehicles get registered in the city.

The road length of 4200 km in Bangalore and its immediate suburbs has proven to be grossly inadequate for the exploding vehicular numbers. Indian Roads Congress recognizes that the width of most of the roads in Bangalore is ineffective to accommodate such a large number of vehicles. Despite the hardship, people from all over the country continue to migrate to Bangalore seeking jobs mostly in IT and ITES industries.

"Bangalore has seen a revolution," announces Kiran Karnik at a well-attended public program on the campus of the city-based Indian Institute of Science. "New factories of knowledge industry have come up all over India. These are high tech industries. The change is visible."

According to NASSCOM, apex body for IT industries in India, the software services industry in India has grown rapidly from small beginnings in the 1980's to generate total earnings of 13.5 billion dollars in 2004-05. The industry was growing at an annual rate of 50% during the 1990s, and since 1999-2000 the growth rate has been around 28% per annum. Riding on the software industry's success, IT enabled services entered India more recently and has become the new high growth industry. It has seen 50% growth rate in the recent years, generating export revenues of 4.6 billion dollars in 2004-05 and employment for about 300,000 people.

While the domestic market for IT services and ITES is also expanding, IT-ITES remains primarily an export-oriented industry, with export earnings accounting for about 64% of the total IT sector earnings of 28.4 billion dollars. In 2001, software services exports constituted 14 percent of India's total export earnings, and by 2005 gross revenues from IT services accounted for 3.3 percent of the gross domestic product. According to NASSCOM-McKinsey report, India now accounts for 65% of the global market for offshore IT services and 46% of global business process offshoring.

Bangalore is the greatest beneficiary of IT revolution. It can even be regarded as the cradle of India's tryst with global capitalism. There are roughly 1200 IT companies operating out of Bangalore. According to state owned Software Technologies Park of India, IT and ITES companies in Bangalore have directly employed more than 250,000 people.

Bangalore's US$ 47.2 billion economy makes it a major economic centre in India. Indeed, Bangalore is India's fourth largest and fastest growing market. Bangalore's per capita income of US$ 6,460 is the highest for any Indian city. As of 2001 Bangalore's share of US$ 3.7 billion in foreign direct investment was the third highest for an Indian city.

The key to IT success is its round-the-clock servicing. "We are a 24/7 industry. When the world sleeps, India wakes up," describes Achar. India is midnight's own child.

"Sleep," yawns Snehalatha. "I have forgotten what it means to sleep peacefully," she complains to a colleague. Before she could have her 'full sleep' till 12, Sneha had received a call on her cell phone asking her to leave immediately. Fresh candidates are coming in by the dozen; they need to be interviewed quickly. Tucking her formal shirt inside smooth silk trousers, she walks past the reception hall. There are an unusually large number of candidates in the lounge today. Sneha's company, like most other ITES companies in Bangalore, throw open walk-in interviews all round the week. People can walk in on any working day, get themselves interviewed and get recruited on the same day. The demand for manpower has extinguished pre-interview formalities. One of Sneha's many responsibilities is to interview and conduct tests for such candidates. "It's going to be a long day," she laments.

The high ceiling of the reception lounge resembles a star hotel. The gleaming floor reflects the images of people and plank, almost perfectly. While entering the gate, Abbas had noticed the carefully manicured lawns of Divergys. They had for once made Abbas forget the tedious drive from Palace Grounds. The glowing campus had pushed back the horrors of pot-holed roads and smoky skies. Abbas cannot help but admire the opulence of the interiors. The clean cut furniture flaunts statues at the corners; the glass table in the middle provides all the newspapers that you can think of, the coffee machine is free for all, paper napkins are no longer a luxury. He cannot keep his eyes off the sheer beauty of the front office. There are only three hurdles between him and the luxury of Divergys.

The common test has questions from low-end math, English grammar and English comprehension. They are also asked to write a 100 worded essay on "Is Science a boon or a curse?" The final round has taped calls of American clients. Abbas is expected to listen to these calls carefully, and tick the right responses on the monitors of plush computer systems. This is not as easy as he expected it to be. He strains his ears to comprehend the accent of American callers. Much before listening to these taped calls, he is asked to identify himself with one of the five ethnic groups - White/Caucasian, Black/African, Hispanic, Asian, and Native American. He does not know half of them – he knows white but what is Caucasian? He has just a faint idea about Hispanic – some exotic tribe?!. Well, he knows he is an Asian. But till now he had believed it to be only a continent. Now he knows it is also an ethnic group.

He finds some questions quite tricky. "What would you do if the customer uses offensive language?" Of the four options – disconnect, transfer the call to the manager, and wait for him to cool down, paraphrase and empathize – something in his gut hints that 'empathizing' is politically correct. Empathy means a lot of goodness after all. He ticks it and proceeds. In the end, he gets his first lessons on customer satisfaction.

"Attempt to resolve customer issues as effectively as possible, try to retain customers and ensure their satisfaction, provide customers with the most accurate and relevant information available, attempt to sell products and services that meet specific needs of the customer." He reads them half-heartedly.

It is only 30 minutes before he receives the results. He has passed the test! But he has to wait for another 40 minutes to meet the HR representatives and take two more rounds of final interview. The deal will be clinched only in these rounds. He has to showcase his certificates, sell his skills and bargain hard for a right salary. All these can happen only after seven in the evening. The weighty watch carelessly drooping down from his hairy wrist is showing six pm. At the reception lounge, there are still more than 40 people. Some are yet to take the tests; some are waiting for the HR guys to take them into closeted rooms for final rounds of negotiation. There is a sudden rush of people coming out from inside – most of them are adolescents in their glitzy western outfits. High heeled and low collared. Trousers hugging the hips tightly. Hair-do vaunting the latest trend. Men have their shirts unbuttoned deep down the chest. Heavyset pendants brazenly dangle on some of them. They chew gum and smile generously. There is a peculiar sway when they walk.

Abbas is thrilled at seeing them. He does not want to read too much in their tired faces. He deliberately overlooks the strains on their exhausted bodies. He is happy to notice the hip-hop outfits and the gum that speaks of irreverence. A guy next to him looks at him smilingly. "Are you joining Divergys?," he asks. "There are all kinds of people here. There are people from army, medicine and all spheres of life. You will enjoy. The only problem is night shifts." Abbas is listening. "Divergys is the best. People from other call centres come here. Here growth is very fast. You can easily move up the ladder. If you like call centres, you enjoy this work." Abbas is more excited.

He sees girls in traditional Indian outfit waiting meekly in the reception lounge for their turn. "Look at that girl. She is so sober. Let her join a call centre and work for some time. She will explode!! She will begin to sport snazzy clothes and long earrings. They enter like Gandhis and come out like Hitlers!" Abbas believes call centres are a big bash. They are loud and bold.

Sociologists in Bangalore studying call centres notice a clear change in the cultural milieu of the city. Although this is not confined only to call centres, the change is more visible in these sites than elsewhere. "There is a general impression that because call centre workers are talking to Americans all the time, they tend to adopt that culture. Call centre workers are said to drink, smoke, take drugs, date and even have numerous sexual affairs. This category of service workers may be able to pursue the new consumerist lifestyle of the urban youth to a greater extent than most others in their age group, due to their higher incomes," says a recent sociological study on IT and ITES industries conducted by National Institute of Advanced Studies in Bangalore. "One finds many call centre agents sporting the emblems of the new global youth culture such as piercings, tattoos and collared hair," states Dr Carol Upadhya, the principal researcher of the project.

Local newspapers run regular stories on call centre lifestyles, including lurid details such as office toilets getting clogged by condoms. Some companies have now officially banned drugs and sexual activities, and have begun to enforce it strictly.

Conference rooms are locked up in the night, common aisles and work stations have hidden cameras. "The emergence of a westernized youth subculture within BPO companies has earned the industry a rather negative reputation among many middle class Indians," Dr Upadhya points out.

Many parents are offended by the sheer sight of hep call centres. Recounting his experience of seeing the call centre where his son is employed, Narasimha Murthy exclaims, "The building is good, the facilities given to employees are nice. But I never felt it was India. I could not see India there. 10 percent, maybe 25 percent is Indian, 75 percent is American. People were moving around frantically. The way ladies were behaving...The party mood out there was not similar to festival mood in India. What dance, what jumping, what cigarette smoking.....*Abbabba*! Many countries attacked Indian culture several times in the past. But our culture didn't change. But if the entire generation undergoes a cultural change, what will happen to our culture? Their way of life is more towards foreign culture. The music they listen to is western. If this goes on, will not our culture get washed away?"

This is exactly the problem of Snehalatha's mother. In traditional Hindu families, girls get married in their early 20s. When the girl's age slips past 25, parents begin to get anxious. Sneha is now 29 and well past the marriageable age. "Who will want to marry a call centre girl? What should the husband do if his wife goes away to work in the night? I don't understand why Sneha should continue working in call centres. What is she achieving by working? Age waits for none. Why doesn't she understand? No husband will tolerate his wife leaving home in the middle of the night. There are so many proposals for Sneha. But she is adamant about her stupid call centre job. Of course she earns money, but what good is money if you cannot have a decent married life?" Sneha's mother loses temper more frequently these days. Sneha is the eldest of three daughters. Her second daughter, though younger to Sneha, is married and 'settled'. But, it is hard to disobey Sneha. She earns well and supports the family.

Her mother's ruffled hair sweeps past Sneha's mind for a second. But it is not the time to worry about her marital status. She has a new candidate coming. She has to check if the guy really sticks to the job, whether he is worth the trouble of expensive training.

Abbas knocks at the door and enters the room humbly. The lady on the chair is young, not a particularly pleasing figure, dark skinned and too thin for his taste. Her hair is chemically straightened, an easy guess! Abbas doesn't want any of these impressions to escape into his face. He smiles carefully and sits on the chair she points towards.

Sneha wants to finish the interview soon. She has at least 15 more candidates to interview. The guy on the opposite chair is bulky but handsome, and his name, as she reads it on the certificate, is Abbas.

"Quickly run through your background and tell me why you want to be in a call centre," says Sneha. "I have my degree in commerce. I was in Dubai till recently. I have shifted to Bangalore because my father is unwell. I should look after him. I need to earn well. Call centres are the perfect place for me to work," Abbas recites his rehearsed lines.

"Working in the night is a very different experience. You may have to start your work in the mid night and go on till early morning. Are you okay with it?" Sneha asks.

"Okay."

"Are you sure? How long do you think you can work on night shifts?"

"At least two years."

"Why call centres?"

"I like talking. If I can talk to Arabs and convince them, why can't I do it to these US guys?!"

"You seem to be beguiled by the call centres. But what do you think are the challenges?"

"Night shifts are the biggest challenge. Bur I know I will manage. I am confidant of getting promoted to higher positions. Night shifts will reduce when you move up the ladder!"

"So you expect growth?"

"Yes, I do."

"Your thinking seems to be deep and profound. But do you know what kind of a job we do?"

"I don't know much about what you do."

"As a customer care representative, you take customer calls and attend to their problems relating to Microsoft products. You don't solve the problem. Though the solution to their problem is very simple, you will never say that. You will be tempted to give out the solution. It will be very obvious to you. But you should never give the solution right away. Instead you have to transfer the call to the concerned technical division."

"Hmm"

"Apart from the HR pay package, there will be lots of awards. They are not in cash, but in kind. We have Microsoft products and many goods to win. We have contests every month. So, there are lots of awards to win. Should sound good to you...hey!!"

"Isn't accent a problem?"

"You need not have a twang. You need not have to drool. Your accent is fine. But we will tweak it a bit during the training. Of course, despite all the efforts we can never speak like an American. But as you can notice, I pronounce some words as they do. It is all about saying words in a way they can understand. Thanks to the British Raj, we are able to speak Oxford English. But believe me, you are going to lose all that once you are here! You will take over American accent!"

Large call centres in India are known for their expensive awards. Most companies have a 'Rewards and Recognition' department. This department designs and runs various contests and incentive systems. One large company has spent 200,000 dollars on rewards alone. There are various awards given out – 'best coach', 'best leader', 'best manager', 'consultant of the year'. Some have attractive titles – 'Roaring Tiger' and so on. Colour television sets, DVD players, caps, T-shirts, cell phones, washing machines and numerous other consumer goods are handed out to workers who take maximum calls or have made maximum sales in a month. One company sends its top 2 percent of performers on a Mediterranean cruise. Some companies even have a CFO – Chief Fun Officer.

"As Maslow recognizes a 'hierarchy of needs', in 'reality', people are driven by different motives at different points of time. The primary drives for any employee would be respect, opportunity, development and money," explains Achar. The rewards and recognition scheme is geared to meet these needs.

Sociologists in Bangalore view them differently. Deliberately constructed fun atmosphere and rewards are strategies to divert the attention of workers from the

monotony of work and arrest high attrition levels. "In order to deflect attention away from the monotony of work, the extremely rigid and structured techniques of direct control, and the stress caused by working on night shifts, and also as a retention strategy, BPO companies offer comfortable, 'fun' and even 'hip' working environments," contends Dr.Upadhya. "To break the monotony of work, there are events such as dressing days when everyone has to come wearing a certain colour or type of dress. Many holidays, both Indian and foreign, are celebrated with elaborate decorations, rituals and parties. One night when we were observing work on the floor at a call centre, it happened to be Halloween and someone dressed as the Grim Reaper came through the floors to entertain the workers."

These efforts are designed to obfuscate the ordeal of incessant call taking, a round-the-clock monitoring and nerve wrecking pressure to sell company's goods to callers. Critical organizational researchers point out that these companies employ panoptical modes of control. There are automated systems of complex tracking tools that continually monitor the flow of calls, the time taken on each call and effectiveness of the call in terms of delivering the message of the company. Managers and team leaders constantly keep an eye on the workers working below them. Apart from quantitative measures, quality of work performed is tracked and evaluated. These assessments are fed into the performance appraisal process. Remote monitoring involves plugging into the call of an agent without his/her knowledge and evaluating it. There are separate departments to perform remote monitoring. Competition is triggered between workers by various technologies. They are made to surpass each other to win attractive prizes. Call centre floor is a hot furnace.

Abbas could not have wished for a better interview. All went perfectly well. "These buggers don't like confident people like us. They need submissive, timid types," he whispers. A management consultant's advice turned out to be particularly handy - "HR departments will encourage us to seek people who have a strong sense of purpose and career. Be careful. Often stamina and low ambition might be more appropriate characteristics than attributes that might indicate a potential high-flyer."

Everything is working the way he had hoped to. He is now comfortable with his accent, diction and intonation. After all there are people far inferior to him with very thick mother tongue influence. "If MTIs can munch sandwiches in the call centre canteen, why cannot I? The well-weller-wellest person has also passed the test! I cannot believe it! I peeped into his monitor during the test. This guy had written weller and wellest for the comparative and superlative for well!"

But he has no reason to complain. The job offer letter, duly signed by Snehalatha and other authorities, is in his hand. There are still so many people waiting to pass the hurdles that he so successfully overcame. Should he not encourage them? "The job's very good for you. You will enjoy yourself. You can be what you are and enjoy life in a call centre. They are all light hearted people. It is very entertaining. It's not very serious."

India currently has a large number of Abbases. They are smart, perseverant, determined and ready to take on the world. Not just the English accent, but their entire selves are trainable. As NASSCOM notes: "India has the largest English-speaking talent pool in the

world – over 440,000 engineering degree and diploma holders, approximately 2.3 million other (arts, commerce and science) graduates and 300,000 post-graduates are added each year." The industry is also gearing up for possible future shortage of skilled workers. Higher education is being increasingly tailored to suit the needs of IT and ITES industries. The recent NASSCOM-McKinsey Report paints a glowing picture of future India. The offshore IT-BPO segment has the capability to generate 60 billion US dollars revenue in the next five years. This would translate into a GDP growth of one percent. 2.3 million direct employment will be generated. 6.5 million workers will indirectly benefit from IT-ITES growth.

There are thousands of jobs remaining to leave the shores of North America and Europe. "Big western companies are convinced that to remain competitive in an era of globalization, they need to adopt outsourcing model. But their countries are obviously worried. A senior member of Dutch government was voicing his concern. He was wondered what would happen to small countries like the Netherlands - that has no natural resources, that is essentially a trading country - if all the work goes to other countries. They are genuinely concerned. Even we don't have an answer. During industrial revolution, they could see that the service sector was emerging. Hence they didn't mind blue-collar jobs leaving for other countries. But now they don't see anything coming. They ask us what is going to happen to them. There is nanotech and biotech. But there is no large industry yet," says Kiran Karnik contemplatively.

But the world is bound to benefit from outsourcing. Karnik articulates it so well – "A typical urban, educated person will not work on farms. If no job, frustration builds up. They may get into drugs and crime. If they are on the border areas, they could be dragged into militancy or terrorism. That is the segment to which the industry is giving jobs. IT and ITES revolution has wide sociological implications. There is a hope. As long as you create hope among people, trouble is contained."

As one expert exclaimed, "the offshored world is indeed a safer place as it gives jobs to all the potential terrorists."

A Teacher's Introduction to

Deconstruction

Sharon Crowley

I dedicate this book to the memory of my parents, teachers both: Dorothy Parriott Conway and J. A. Conway.

Contents

3 Deconstructing Writing Pedagogy

Deconstruction, and its concern with metaphysics, minds, and the history of Western philosophy may seem so esoteric as to be far removed from the needs of the classroom teacher of English. I don't think that this is the case, however. Aside from its intrinsic interest, deconstruction harbors a number of important implications for the teaching of English. For one thing, it presents some interesting models for reading and studying literary texts (and student texts as well), models which might be profitably emulated in reading or writing pedagogy. For another, deconstructive insights about teaching, language, and writing offer up a critique on which we can hang much of the pedagogical practice that has been adopted by writing teachers in recent years.

However, a deconstructive reading of English teaching carries with it a good many negative implications, insofar as it calls into question some of the basic assumptions that have always taken for granted in such teaching.[1] For example, a deconstructive analysis undermines the notion that the composing process begins with an originating author; this notion characterizes both traditional and process pedagogies of composition. Deconstruction also rejects the traditional characterization of writing as a repetition of the same (as is now the case with instruction in expository writing, which is supposed to re-present—picture, imitate, copy—some piece of a student's knowledge). Such an analysis also challenges the notion that informs and permeates traditional pedagogy: that language is a transparent representation of the world and/or of the minds which populate it.

Reassuringly enough, a deconstructive reading of writing pedagogy underscores the appropriateness of much of the lore connected with process pedagogy. It also demonstrates, however, that some alterations remain to be considered, if we take deconstructive notions about language seriously. But challenges like these can strengthen a tradition

31

that survives them. As Vincent Leitch has remarked with regard to Derrida's own engagement with pedagogical issues, to threaten a system of beliefs is also to "foster inquiry and transformation" (1985, 18).

Sovereignty and Authority

As I tried to establish earlier in this essay, post-structural thought raises serious objections to the metaphysical fiction that would place a sovereign, self-aware consciousness at the center of any composing act. I don't think it is unfair to say that traditional thinking about writing has been author-centered, and that, as a consequence, writing pedagogy has always focused on authors—specifically on their intentions and psychology. Apparently, the view that the writing process begins and ends with an individual author is a historical phenomenon whose ubiquity in modern thought has to do with attitudes toward discourse that were developed during the seventeenth century.[2] This attitude still prevails in our thinking, although post-structuralist historians have begun to question its staying power.

In our own time, the author-centeredness of writing pedagogy has given rise to a school of research into composing that studies the mental habits of composers. These researchers are trying to devise a model of the composing process that is supposed to reflect the composing process used by all writers. They draw on cognitive psychology for their rationale and techniques, assuming that this discipline which studies "the human mind" can provide us a key to understanding the nature of writing.

But the assumption that authorial minds are solely responsible for the production of written texts is also held by composition theorists who are not explicitly tied to cognitivist models. In many cases, the author-centeredness of their theories of composition derives from their unwitting subscription to the metaphysics of presence. For example, C. H. Knoblauch and Lil Brannon append the following footnote to the opening chapter of their *Rhetorical Traditions and the Teaching of Writing*:

> Composing is a richer concept than "writing" and wherever we use the term we mean to designate the forming/shaping activities of mind, not merely the learned behaviors associated with writing in the narrowest sense—using a pen or pencil, making the letters of written discourse, using the technical conventions of the written language, and so on. The distinction is crucially important because "composing" is a natural human endowment while "writing" is learned. Yet writing means next to nothing if divorced from the larger concept of "composing." (1984, 19–20)

To a reader who is alert to the deconstructive directions taken by language, this comment is reminiscent of the traditional canard that "thinking" (here called "composing") precedes writing. Not only that, thinking is better than writing, since the former takes place in an author's mind, while writing takes place in language. "Composing" is "natural" for Knoblauch and Brannon, but writing is not; writing is artificial, foreign, monstrous, almost meaningless, an unnatural act. Writing is not self-sufficient on this model; rather it is a technology that depends for its value on some other process which is more essentially human, more present to itself.

The post-structural critique of the notion of the sovereign self poses a number of difficulties for a research program, or a pedagogy, centered on the psychology of authors. As Derrida points out in the *Grammatology*, psychology can only survive by positing a "naturalist opposition" between "internal" and "external" experience. The difficulty is that, on a psychological model, writing is, stubbornly, an "exteriority"; we will never be able to account for writing by looking for some "interiority" that exists above or beyond or in back of it. Even if students of the composing process find a research technique that permits them to establish a model of the writing process which describes, in the most minute physiological or psychological detail, what happens in the minds or brains of people who write, we will nevertheless have learned nothing about the uses to which writers put language, which by definition is never private. And if psychologists or psycholinguists succeed in finding or describing some mechanism that accounts for the production of language, they will not have made much progress toward grasping the nature of writing, the uses of which depend on its availability to the community that is served and defined by it.

Further, since writing is made up of language, it both precedes and succeeds individual writers. Thus a deconstructive attitude toward writing pedagogy will focus its attention away from individual authors and toward the language currently in use in the community served by the pedagogy.

Because of both its implicit critique of the sovereign self and its emphasis on the absence of readers from the composing act, deconstructive attitudes toward language allow us to redefine many of the crucial terms with which we work every day—terms like "reader" and "writer." In a review of Derrida's *The Post Card* (1984), Gayatri Spivak argues that the "scene of writing" (what composition theorists call the "composing process") requires absence as its necessary condition. That is, the scene of writing denies the sovereign authorial presence so often invoked by traditional pedagogy. Spivak notes that "when a

man writes, he is in a structure that needs his absence as its necessary condition (writing is defined as that which can necessarily be read in the writer's absence)" (1984, 19). That is, when (if) a writer writes, he does so because the desired audience is not immediately present. Its "presence," if you will, is fictional; it "exists" only insofar as the writer imaginatively embodies it, as some construct of future reader(s).

What is even more curious, the scene of writing thus mandates the writer's pluralization; for the duration of composing, writer becomes audience, a move that must be made in order for there to be a motive for writing at all. Spivak argues that writers resist this pluralization of themselves, and that readers conspire with them by assuming that the discourse has been produced by a writing "self": as she puts it,

> when a person reads, the scene of writing is usually ignored and the argument is taken as the product of a self with a proper name. Writers and readers are thus accomplices in the ignoring of the scene of writing. (20)

This misperception of the act of writing is enhanced by the installment of writing between the covers of papers, books, and anthologies, whose white margins allow readers to think the writing "contained" therein is complete, and more, that it represents the completed thought of the person whose name is attached to them. When readers read, then, they are seduced by textual artifacts into believing that the text was composed by an integrated "self," who possessed a unified "intention," and who carried out that intention with more or less success. In other words, they assume that the written discourse somehow re-presents the "thoughts" or "intentions" of its "writer."

But the Derridean critique of the inability of selves to "re-present" themselves in language demonstrates that all of this is yet another metaphysical construct. As Jasper Neel explains,

> most Western writers assume that writing serves as a vehicle to carry thought. But this assumption remains forever haunted by the problem that thinking (at least in the Western sense of thinking) cannot appear outside writing. Something at the core of thinking seems to be missing. Writing adds what is missing but in doing so reveals the incompleteness of the thing that needs a supplement to be itself. ... . This process of supplementation endangers thought because writing, rather than merely serving as an empty vehicle waiting to transport and then discharge thought whole, adds itself to and then substitutes itself for thought. (1988, 162)

What readers read is writing, not thought.

And yet the fiction of authorial sovereignty is lent enormous force by the power relationship that is inherent in all writing, when seen from the writer's point of view.[3] The solitude that often accompanies the act of writing seduces writers into believing that they are engaged in individual acts of creation; it is all too easy to forget, while writing, that one's language belongs to a community of speakers and writers, that one has begun writing in order to reach (absent) readers, and that one's "innovative ideas" have long textual histories behind them, histories which contain many many voices. Think, for example, of the voices that speak throughout this writing: Derrida's, of course, but also Jasper Neel's, Aristotle's, Gayatri Spivak's, Meyer Abrams's, Barbara Johnson's, and on and on.

Because of the illusion of authorial sovereignty, it is difficult for writers to acknowledge the inevitable immersion of their own voices in the flow of differance. Two groups are excepted from this generalization. The first consists of experienced writers, who have learned throughout many trials the difficulty of getting readers to "see" what was "meant." Over time these writers have learned to assume the point of view of potential readers, whose voices are always being heard during the writing process (in the back of the head, so to speak). Such writers produce "readerly" prose, and can carry on an imagined dialogue with potential readers as they compose. In other words, experienced writers know how to submit themselves to the flow of the community's language. The second group consists of inexperienced writers, who find their own voices simply drowned out by those of teachers and other sources of discursive authority. In a sense, then, inexperienced writers are more in touch with the flow of differance than are writers who accept the fiction of authorial sovereignty.

Assuming a deconstructive perspective, then, I must argue that to center a writing pedagogy on authors, rather than on readers and the common language of the community, is to insert an attitude into the composing act that misunderstands its focus. I would argue further that traditional composition pedagogy begins from the notion of authorship, not only because of its immersion in the metaphysics of presence, but also because the teachers who design such courses are writers whose work commands a good deal of authority, while their students are only readers, at least within the confines of the writing classroom.

Ironically enough, teachers do most of the writing in composition classes—they write the syllabus, the assignments, and the daily lesson plans; they re-write the textbook in the sense that they interpret it for their students; and finally, they write (revise, edit, grade) their students' papers. Students, on the other hand, spend most of their time reading: they read the teacher, to determine what he "wants"; they read the

textbooks or anthologies he has assigned to find out what he wants them to know; they read his assignments to determine what he wants them to do. When they "write" in response to his assignments, they tell him what they think he wants to hear and write according to the rules he wants to see realized in their papers. Almost never do they envision themselves as having something to teach their teachers.

As teachers, it is all too easy for us to be seduced into acting as the only writers of/in a writing course, to refuse students the opportunity to wrest that role from us. And it is even easier for students to accept the role of perpetual reader, inasmuch as they have been invited to do just this throughout most of their school lives. And yet to do so is to ignore the movement of writing, of differance, that always postpones the achievement of final authority for discourse. Deconstruction assumes the complicitly of writers and readers in all acts of composing. That is, readers of any discourse become its writers as they re-construct a "meaning" for it.

If writing teachers find this argument compelling, there are some strategies available to them. They can reject or redefine some of the traditional strategies that implicitly reinforce their power as writers of the composition course. One of these is the notion of intention. As William Covino remarks, if we accept deconstructive notions about writing,

> all writing takes place without finality because finality is located in some sort of definition or purpose.... We may suspect that our insistence as teachers upon "writing with a purpose" deserves questioning insofar as it subordinates "strategy without finality" to "the self-assured certitude of consciousness." (1981, 2)

At the very least, any pedagogy which insists that students' papers reflect "the self-assured certitude of consciousness" must contradict the daily experience of writing teachers. A deconstructive pedagogy, on the other hand, would redirect the notion of intention or purpose away from examination of a text and onto its suitability to the rhetorical situation for which it was designed. Perhaps it would even reject the notion of intention altogether and substitute the task of incorporating the projected needs of audiences into the writing process.

A deconstructive analysis begins by assuming that writing is communal, that, as Michael Ryan puts it, "writing can belong to anyone; it puts an end to the ownership or self-identical property that speech signaled" (1982, 29). The failure of writing to signal its ownership by anyone is, of course, exactly why Plato's Socrates condemned it:

> Once a thing is put in writing, the composition, whatever it may be, drifts all over the place, getting into the hands not only of

> those who understand it, but equally of those who have no business with it; it doesn't know how to address the right people, and not address the wrong. (275e)

It may be misguided as well as uncharitable of me to charge Plato with hierarchizing the reading public here, but it seems unmistakable that he wanted to reserve the use of writing for those who understood its power. Apparently he detested or feared the democratic tendency of writing, its insistence on making itself available to any who can read.

The public nature of writing, its refusal to be possessed by either writer or reader, works itself out in several interesting ways. First of all, it supports the notion recently advanced by some composition theorists that all writing is collaborative. Research into the production of writing in the marketplace has established that most of this sort of work is the product of many hands.[4] It is also the case, however, that much writing for which authors take individual credit is, in fact, collaborative. By way of illustration, I repeat a story told by Tilly Warnock, a teacher of writing:

> One cold July night several years ago at Vedauwoo, during the Wyoming Conference on Freshman and Sophomore English, several people were talking beside the fire when one man began explaining how exhausted he was from revising his textbook. We asked how he writes. He described his writing process in detail but seemed particularly pleased with the stage when he passes his draft to his wife, who is not in English, so that she can detect the b.s. in his work. Because I was delighted by his account, I asked if he included such collaboration as a common stage for writers in his textbook. He drew himself to full height, a large shadow against the flames and silhouettes of the mysteriously shaped mountains, and replied indignantly, "Every word I write is my own." The conversation ended. (1985, 305)

Such husband-wife collaborations are no doubt numerous; many are acknowledged, however, only in prefaces or dedications that thank spouses for their "unfailing patience and dedication to the manuscript." One also wonders about the role of Milton's daughters in the composition of *Paradise Lost*, the women who "recorded" the poem while the blind poet dictated. Other, silent collaborators are editors, only a few of whom, like Maxwell Perkins (who fashioned Thomas Wolfe's chaotic manuscripts into readable novels), are ever credited for the writing they do on a text. From a Derridean point of view, editorship of a work-in-progress, or any reading of it, counts as part of its writing. This is equally true for the writing classroom. Thus the students who read their colleagues' works-in-progress and comment on them are as

much a part of their composition as is the "original" author; this is true of teacherly readings as well.

Indeed, even from a single "originary" writer's point of view, the instigation of writing simply cannot be isolated from its contexts, which are myriad. They include not only the writer, her sense of her present state and her memory of her past; they include her attitude toward the present assignment, her teacher, her class, the other students in it, toward schooling in general and her schooling in particular, her past experiences with writing and with writing classes and assignments. They also include her physical state at the time of writing, and the tools she uses; and perhaps less obviously they include her role in, and attitude toward, the communities of which she is a part—her family, her friends, her neighborhood, ghetto or barrio, her town, city, or reservation. Nor, because of the play of differance, are any of these contexts static—they are interrelated and constantly shifting their relationships with one another.

But if all writing is collaborative and contextual in its composition, its reception is multiple, public, as well. This implies that classroom writing, like all writing, is, theoretically at least, available to anyone who can read. This theoretical availability can be realized in practice when students are encouraged to immerse their classroom writing into the flow of whatever public discourse is going on around them—in their institutions, workplaces, or communities. In fact, the dissemination of classroom writing into the discourse of the school or larger community may be one solution to the difficulty that haunts much student writing—its lack of motivation. A deconstructive pedagogy would engage students with issues that concern them directly, socially, and politically, and would direct the resulting discourses into the communities where such things matter: city or tribal council meetings, neighborhood groups, sorority meetings, school board meetings, landlords' associations, planning authorities, parents' groups, and the like.

Supplementation and Method

As my readers will have surmised by now, the deconstructive notion of supplementarity problematizes several canards that we use in our teaching. When we tell students to "say what they think" or to "write what they mean," we ignore the differing, supplemental facets of writing. More profoundly, differance and supplementarity problematize our easy separation of thought from language, content from form, meaning from expression, as well as the priority we assign to the first

term in each opposition. However, deconstructive thought does not authorize a simple reversal of such priorities. To privilege form over content, for example, as much instruction based on current-traditional rhetoric does when it centers on "the paragraph" or "the thesis statement," is simply to be trapped within logocentrism once again.[5] More pertinently to our work as teachers, it is to misunderstand the nature of writing, which consists of signifiers, of signs representing signs representing signs, to infinity.

In *Dissemination*, Derrida has some provocative things to say about traditional notions about composing—called "method" by its seventeenth-century progenitors.[6] René Descartes, for example, proposed that composition could move in two directions. Analytic method—the method of inquiry—moved from effect to cause or from the specific to the general in such a way that an account of an analytic inquiry would exactly represent the way in which its results were discovered. Synthetic method—the method of presentation—moved from cause to effect or from general to specific; since conclusions had already been derived by means of analysis, the writer who worked with synthetic method could present them first. Throughout the methodical tradition, synthetic method was characterized as less valuable, and secondary to, analysis, since it was less original. Or, to use a favorite Derridean metaphor, the work of synthesis, gathering up and distributing what had previously been thought, was parasitic on, and reductive of, some more primary work. (Incidently, synthetic method was enshrined in traditional composition instruction as the five-paragraph essay, which moves from the general to the specific and which repeats for the reader some investigation that has always already taken place through other means.)

Derrida's comments on method come about in the context of his meditation on the puzzle of "the preface"—that part of the text which announces itself as coming before the text, "pre-speaking it," and yet which is ordinarily written after the text is finished. The preface claims to embody or summarize, or at least to introduce, what is contained in the rest of the work. This irruption of the preface into the composing process, and its dissemination into the "work itself," interests Derrida partly because it provides graphic testimony to the failure of composition ever to proceed in the orderly fashion dictated by method. The preface graphically signals that fact that "the text is no longer the snug airtight inside of an interiority or an identity-to-itself . . . but rather a different placement of the effects of opening and closing" (*Dis*, 36). Once again, texts move, open and close, come and go. They refuse to submit themselves to the stabilizing dichotomy of method,

which would insist that texts are first thought, and that then they are written.

The traditional assumption that thinking precedes writing is derived directly from method, as this was delineated in the eighteenth-century rhetoric and logic texts that spawned traditional writing pedagogy. Recently, traditional composition textbooks have altered the language in which they couch their linear model of composing; the stage which nineteenth-century text writers called "thought" has been converted to "prewriting," and the older two-stage model ("thought" and "presentation") now has three stages: prewriting, writing, and rewriting. But this shift in nomenclature does not constitute a fundamental alteration in traditional notions about writing. "Prewriting techniques," or "heuristics," no matter how intricate, nevertheless presume that writers first engage in some activity that is not necessarily linguistic before they begin to write.

On a deconstructive model of the writing process, of course, beginnings, endings, middles and muddles are not quite so clearly demarcated. I wonder, for example, exactly when I began the "prewriting" for this book. Did it begin with my first reading of the *Grammatology* in 1978? Or with the composition of my first essay about deconstruction (in 1979)? And had I finished with prewriting when I entered the first lines of this essay into my computer? Not necessarily, since these lines came from a paper I had delivered at a meeting long before the composition of this essay was suggested to me. I was still rereading Derrida when I entered those hand-me-down lines, hoping they would break the spell of "his" voice over "mine." And, in contrast to the neat linear process dictated by method, I wrote what is now the second chapter first. Although that's not quite right because I found that I had to write parts of what is now the first chapter before I could finish the second. And so on.

And where does rewriting begin and end? As I write these words, the manuscript has already been reviewed and accepted for publication. That is, these words were not in the draft that its reviewers approved. They are here now because I've been asked to give more examples, in a revised version of the manuscript, of how deconstructive insights affect our thinking about writing pedagogy. And if the editors don't approve them when they do their rewriting of the manuscript, these words will be edited out and no other readers will ever read them. Certainly the reviewer who suggested such changes took part in the revision process. Other revisions will occur, of course, when readers rewrite the text after it is published, in reviews and, most likely, in `ters addressed to me.

Genre Alert!

Traditional composition pedagogy is often organized along generic lines. Its textbooks devote chapters to the "expository essay," the "essay of comparison and contrast," the "persuasive essay," and the like. These and other conventional generic distinctions imply that certain formulaic constraints, embedded within a text, display the mode of thought or the kind of intention held by the writer. But the deconstructive critique of the nature of textuality disrupts a good deal of the traditional pedagogical thought that would channel the flow of the writing process into discreet generic categories, or would divide writing instruction itself into units, sections, or parts, "assignments," "themes," and "papers."

On the deconstructive account (and in process pedagogy as well) writing is conceived as continuous and dynamic. For pragmatic reasons, readers and writers entertain the illusion that the flow of writing is halted by its being stapled or paper-clipped and placed inside a plastic folder purchased from the bookstore. But this illusion of closure is only a convenient fiction. In keeping with its general suspicion of the imposition of limits on the movement of writing, then, the deconstructive critique of textuality also problematizes traditional use of generic categories.

Traditional composition teachers borrowed their list of generic categories from an eighteenth-century rhetorical theory that centralized the notion of authors' intentions. In this theory, genres such as "exposition" were thought to be discriminable from others such as "persuasion" or "expression" by means of the enshrinement within them of their authors' "aims." According to George Campbell, whose *Philosophy of Rhetoric* (1776) is an important progenitor of this tradition, such aims include enlightening the understanding, pleasing the imagination, moving the passions, or influencing the will. The text writers who borrowed Campbell's classifiction of "aims" soon began to associate each of them with a discriminate genre of discourse. That is, expository discourse appealed to the understanding, while narration and description appealed to the imagination, poetry inflamed the passions, and persuasive discourse influenced the will. Thus the metaphysical rhetorical theory that was spawned by Campbell's work supposed that the structure of a completed text could somehow graphically re-present its author's intention.

But, as we have seen, the notion of intention is a metaphysical fiction (this may be true of the notion of genre as well).[7] While generic distinctions are useful to readers, since they may (or may not) announce

a text's lineage (the texts claimed as progenitors), they apparently do not entirely constrain the writing process as it occurs. When professional writers write, they ordinarily do not begin with generic constraints in mind. Often they do not know what sort of piece will result from their work; sometimes they are unsure even whether it will become prose or poetry.

And when an experienced writer is asked to write within a prescribed genre, such as a book review, she does not necessarily consult a conventional format that is prescribed for such pieces, although she may wish to do so in order to insure that her readers get all the kinds of commentary that they have learned to expect from such pieces of writing. During composition, however, she also considers her responses to the work in question, as well as the probable response of the audience for the review, and the context (journal or periodical) in which the review is to appear. If she is acquainted with the author, as often happens, she also considers that person's probable response to her review, and so on. She struggles to balance all of these constraints within the writing process, availing herself of whatever linguistic resources become apparent to her while she writes.

Thus, to insist that students begin the writing process within the conventions prescribed for them by mandated genres, such as exposition, is to simplify the nature of the writing process as professionals use it. It also denies the locatedness in place and time that characterizes rhetorical situations, insofar as students are encouraged to think of the generic classifications as more or less universally useful responses to any writing task. Further, it forecloses the possibility, at least within the scene of the classroom, that whatever the student is working on at the moment may turn itself into a poem, a letter home, a script, or an essay whose format does not appear in a textbook classification. To put this in deconstructive terms, genre-based pedagogy places restrictive boundaries on the movement of differance.

A deconstructive analytic also severely problematizes the status of some of the genres that are nearest and dearest to traditional pedagogy. For example, it compromises the traditional assumption that some writing (or all of it during early stages of composing) is "personal" or "expressive." Rather, all writing is done in order to be read eventually, even when it takes the form of notes or freewriting. The absence of an other, an audience, is precisely what motivates writing in the first place, even when that other is some imagined future version of one's "self," as in the case of notes jotted down for future reference. Too,

this "future self" will be different from the "present self" because of its necessary immersion within the flow of differance.

If a deconstructive attitude problematizes the notion of the "personal essay," it poses nearly insuperable difficulties for the notion of "expository writing." Most of us who teach writing in American educational institutions work with courses or programs that utilize the term "expository writing." Exposition is a relatively new genre within the rhetorical tradition, having been invented in the late eighteenth century as an efficient generic means of conveying the results of scientific investigation to interested others. The "exposition" entailed in the term does not refer, of course, to writers' exposing their "thoughts," or "selves," as they are supposed to do in personal essays. No, it is some "subject" that is to be exposed (or, in a strange metaphoric opposition, "covered") by expository discourse. In the words of one of its early twentieth-century proponents, expository discourse amounts to a "succinct and orderly setting-forth of some piece of knowledge" (Baldwin 1902, 40). And according to the authors of a popular late-nineteenth-century textbook, a writer who undertakes the composition of expository discourse must "understand the subject under discussion better than his readers do." In exposition, "the writer's aim is to make others see the meaning of some idea as clearly as he himself sees it" (Scott and Denney 1909, 302).

Alexander Bain, who provided a powerful rationale for exposition during the middle of the nineteenth century, gave a more inclusive definition: for him, exposition was "the mode of handling applicable to knowledge or information in the form of what is called the Sciences," which, he was confident, were "each laid out on the plan of exhausting, in the most systematic array, all the information, respecting one department of nature" (1866, 147). Expository writing was to imitate this exhaustivity. Each expository essay was to lay before its readers, complete and entire, the writer's understanding of a given "subject."

If one accepts Derridean notions about writing, of course, "expository writing" is not thinkable. From a deconstructive point of view, writing does not "expose" much of anything, except perhaps itself. Nor can it "cover" (either in the sense of cloaking or exhausting) some subject that exists outside it. Derrida questions the ability of writing to represent anything outside itself, as well as the notion that some transcendental signifier can be found—mind, idea, soul, subject, knowledge, essence—which could authorize that representation. What precedes the act of writing is more writing; all that follows upon it is more writing (or

reading). What writing does is extend itself, chain itself, into a series of signifiers whose proliferation can only be halted during the writing process by an act of will or sheer exhaustion.

Bain's project of systematizing and completing knowledge is the very one that Derrida sets out to attack. Derrida reads the necessity for logocentric cultures to think of knowledge as enclosed or encapsulated within essays or books as a grasp for totality, for closure, finally, for control; every writer wants to "have the last word." Again I quote Derrida (which in itself is sometimes an illuminating exercise in the inability of writing to expose anything):

> Good writing has therefore always been comprehended.... within a totality, and enveloped in a volume or a book. The idea of the book is the idea of a totality, finite or infinite, of the signifier; this totality of the signifier cannot be a totality, unless a totality constituted by the signified preexists it, supervises its inscriptions and its signs, and is independent of it in its ideality. (*OG*, 18)

In other words (Richard Rorty's), Derrida wants to demolish the notion of

> 'the book'—the notion of a piece of writing as aimed at accurate treatment of a subject, conveying a message which (in more fortunate circumstances) might have been conveyed by ostensive definition or by injecting knowledge straight into the brain. (1978, 146)

This goes equally well for the notions of "papers" and "themes," of course, which, on Derrida's model, cannot be construed as "containers" for some bit of "knowledge."

Expository writing, in its desire for transparency, completeness, and closure, participates in the Western metaphysical tradition in an almost ideal way; perhaps it is not too much of an exaggeration to say that exposition is the genre, par excellence, which secures the metaphysics of presence within the center of academic discourse. Vincent Leitch has remarked that the structure of any logocentric system "insures balance, coherence, and organization, all deployed around a controlled point," which is as nice a description of the five-hundred-word theme as will be found anywhere outside the textbook tradition (1983, 36). If Derrida's insights are worth entertaining, we writing teachers must consider an alternate possibility: to insist that our students compose balanced, coherent, and organized pieces of discourse is to hide a deception, a deception which radically misunderstands the nature of writing.

If traditional classes in "expository writing" play a bad joke on all of us, students are the most obvious butt of the joke. The tasks set

for students in such a course are simply not possible to accomplish. First of all, assignments in exposition, if taken seriously, place students in the position of imitating writers who have devoted their careers to becoming expert in some field of inquiry. Such assignments, at the very least, trivialize the difficult process of acquiring scientific knowledge. But even more seriously, such assignments ask young people to learn to manage the terms and conventions of the discourse which surrounds a "subject" in a very short time and without assistance. Serious students try to work their way out of this dilemma by retreating to the library in order to read up on abortion, the war between Iraq and Iran, or whatnot. In Derridean terms, they try to enter into the chain of signification that surrounds, and amounts to, discourse about their subjects.

Students have another alternative, of course. They may attempt to fulfill an expository assignment by producing what Jasper Neel calls "anti-writing," where they "generate infinite numbers of texts that proclaim themselves as correct syntax, patterns of arrangement, and categories such as exposition" (1988, 149). Neel argues that students have learned that

> they can avoid writing altogether by providing shells with no interior: spelling, punctuation, sentences, paragraphs, structure, and coherence that are nothing but spelling, punctuation, sentences, paragraphs, structure and coherence. (165)

Faced by the enormity of trying to represent some "subject" in writing, then, some students adopt a strategy of display. As Neel observes, classes in expository writing "hardly ever generate any writing." Instead, students' texts simply announce that their authors are observing the syntactic and organizational rules they have been taught to follow. Anti-writing is a cynical version of the traditional Western attitude toward writing: it is the outside of an outside, writing thoroughly technologized, pure ritual.

Deconstructive Pedagogy as a Positive Science

The performance of this "reading" of traditional pedagogy may be as far as deconstruction will take us. I am not sure that a deconstructive pedagogy can be realized—the term is itself an oxymoron. Nevertheless, I can guess about some things a deconstructive pedagogy might be up to if it were thought of as a set of strategies for teaching.

First of all, it would reject the traditional model of authority that obtains in most American classrooms, where the teacher is both

receptacle and translator of received knowledge.[8] At the very least, a deconstructive pedagogy would adopt the positions that knowledge is a highly contextualized activity which is constructed within groups, communities, or societies; that knowledge itself is a volatile construct, subject to alteration when contexts for knowing are altered; and that so-called "received" knowledge is just that—received. That is, the knowledge which is preferred and privileged at any given moment is so, simply because influential members of the concerned community have subscribed to it. A teacher who was convinced of the force of these assumptions would, no doubt, try to construct a classroom scene where they were daily allowed to come into play.

For another thing, a deconstructive pedagogy would reinforce the notion, as composition specialists would have it, that writing is a process. But it would interpret this slogan more profoundly to mean that the process that is writing is differentiation and not repetition of the same. The writing process differs to some extent with every situation or task; which also implies that no universally useful model or tactics for generating writing will ever be found. (At the very least, if such models exist, they exist in language, not minds, and are thus language-specific.) This does not mean that the writing process cannot be generalized about, of course. It simply means that writers must always take into account the constraints of the rhetorical situation in which they find themselves.

That writing is a process of differentiation also means that a syllabus for a writing class would always be in revision, would always be available for alteration as class members' writing changed the focus of the class. A syllabus for a semester- or year-long writing course that respects deconstructive attitudes toward writing would assume its relevance to all other writing being done, and formerly done, by teacher and students. No writing would be exempt from reading, rewriting, in such a class—papers for other classes, childhood poetry, the teacher's own work-in-progress. Nor would writing events that occur in connection with such classes be perceived as unrelated to one another. An "assignment" is writing by a teacher that calls for writing by students, which in turn calls for more writing by the teacher and so on and on. Freewritings, journals, essays, papers, are all part of a differentiating process that they only seem to halt by being put down on paper. They are all susceptible to revision, to incorporation into other texts, whether those other texts are written by the same or another or several writers at once. It may (should?) be that no "pieces" of writing are ever completed in such a class. The feeling that a writer

can "finish" a piece of writing may simply disguise her exhaustion, her inability to go on, her lack of resources like time or money.

In other words, a deconstructive pedagogy would devise ways to engage students as active readers—that is, re-writers—of the teachers' writing—her course. It would encourage students to revise assignments and syllabi, to reject an assigned text and choose new ones. Such procedures would acknowledge the movement of differance, of writing, as it is worked out in the relation between the writers and readers of a text called "composition class." The changing relations that develop between teacher and students—and among students—as the writing class evolves, would mimic the changing relations that occur between words and sentences in a discourse as it is revised. Any readings that were undertaken in connection with such a class, literary or not, would also be seen as texts to be rewritten, to be incorporated into students' writing processes.

Further, a deconstructive pedagogy would treat the writing process exactly as it occurs always and everywhere: it would be as fully contextualized within the classroom as without. In composition class, English teachers are the ultimate audience for writing, much as are bosses, editors, and teachers of "content-area" classes. The traditional notion that composition prepares students for writing in the "real world" pretends that classroom writing is "practice" for some future "real writing." In other words, traditional assumptions always defer "real" writing, and this explains why so much student writing is unmotivated.

In a writing class governed by deconstructive attitudes, on the other hand, teachers would sensitize their students to the institutional realities in which they write, and they would treat the institutional situation as a "real-world" one where students are expected to learn a special brand of writing—academic discourse. And, since knowledge itself is always in flux, and since preferred knowledge is always inscribed by a culture in its institutions, students and teachers would examine the institutional ideology that governs their work: why "academic discourse" is preferred in school to whatever discourse(s) the students bring to school with them; why students might want to learn it (or not); why teachers are invested with institutional authority; why they are expected to give grades; how this constraint both interferes with, and encourages, the writing process.

In short, to adopt deconstructive attitudes toward writing and its teaching will not be an easy matter for either students or teachers, all of whom are accustomed to working within the constraints placed on

them by institutions and a culture that subscribes to the metaphysics of presence. Perhaps the best to be hoped for is that a deconstructive critique demonstrates the necessity of continued interrogation of the strategies used to teach reading and writing. I can only hope that this essay has stimulated a few of its readers to engage in such a critique.

Appendix
How to Read Derrida

In her "Translator's Introduction" to *Dissemination*, Barbara Johnson identifies some of Derrida's rhetorical strategies in "Plato's Pharmacy" as follows: translation of a single word (wherein the Greek *pharmakon* is played with as both "poison" and "remedy"); anagrammatical texture (play with the etymology of a term); lateral association (which utilizes other contexts in which a given word is used across Plato's canon). Likewise, Derrida has also inscribed a set of themes of his own in this work: webs, textiles, textures, pens and surfaces, fathers and sons, sorcerers, magicians, and healers, and so on.

His realization that language is opaque, rather than transparent, explains why Derrida's works are so difficult. He uses incessant and extended punning, ellipsis, and self-reference to call attention to language, its cheats and maneuverings. He often speaks in tongues. Sometimes it is hard to tell whether one is reading Derrida, or whether he has put on Rousseau's—or Aristotle's, or Freud's—voice in order to speak through, around, and inside of that voice. In *Glas* (1974), his commentary on Hegel and Jean Genet is presented in two columns set side by side, so that they comment not only on their "subjects," but also on each other. They illustrate as well the illusion of "the book"—the illusion that books are stable containers of information whose margins and endpapers mark the last word, the end of all that can be said.

In short, it is best to approach Derrida's texts just as though they were literary texts. Readers should be alert to the appearance and reappearance of a favorite set of motifs, to Derrida's writing under the cover of some other writer's voice, to elliptical or unusual syntax, to coined terms or phrases, to play with the conventions of printing, and to bilingual punning.

I suggest that beginning readers of Derrida read together in groups of three or four. Read his work in short stretches, and then meet to discuss it. Since deconstruction is a strategy of reading, the real usefulness of reading together is established during the reading group's

JAN BREMAN

MYTHS OF THE

GLOBAL SAFETY NET

EDIA REPORTS ON the economic meltdown have mainly concentrated on the impact of the crisis on the rich nations, with little concern for the mass of the population living in what used to be called the Third World. The current view seems to be that the setbacks in these 'emerging economies' may be less severe than expected. China's and India's high growth rates have slackened, but the predicted slump has not materialized. This line of thought, however, analyses only the effects of the crisis on countries as a whole, masking its differential impact across social classes. If one considers income distribution, and not just macro-calculations of GDP, the global downturn has taken a disproportionately higher toll on the most vulnerable sectors: the huge armies of the poorly paid, under-educated, resourceless workers that constitute the overcrowded lower depths of the world economy.

To the extent that a major segment of the globalized workforce is incorporated into the production process it is as informal labour, characterized by casualized and fluctuating employment and piece-rates, whether working at home, in sweatshops, or on their own account in the open air; and in the absence of any contractual or labour rights, or collective organization. In a haphazard fashion, still little understood, work of this nature has come to predominate within the global labour-force at large. The International Labour Organization estimates that informal workers comprise over half the workforce in Latin America, over 70 per cent in Sub-Saharan Africa and over 80 per cent in India; an Indian government report suggests a figure of more than 90 per cent.[1] Cut loose from their original social moorings, the majority remain stuck in the vast shanty towns ringing city outskirts across the global South.

Recently, however, the life of street hawkers in Cairo, tortilla vendors of Mexico City, rickshaw drivers in Calcutta or scrap mongers of Jakarta has been cast in a much rosier light. The informal sector, according to the *Wall Street Journal*, is 'one of the last safe havens in a darkening financial climate' and 'a critical safety net as the economic crisis spreads'.[2] Thanks to these jobs, former IMF Chief Economist Simon Johnson is quoted as saying, 'the situation in desperately poor countries isn't as bad as you'd think'. On this view, an admirable spirit of self-reliance enables people to survive in the underground circuits of the economy, unencumbered by the tax and benefit systems of the 'formal sector'. These streetwise operators are able to get by without expensive social provisions or unemployment benefit. World Bank economist W. F. Maloney assures the *WSJ* that the informal sector 'will absorb a lot of people and offer them a source of income' over the next year.

The *WSJ* draws its examples from Ahmedabad, the former mill city in Gujarat where I conducted fieldwork in the 1990s. Here, in the Manek Chowk market—'a row of derelict stalls', where 'vendors peddle everything from beans to brass pots as monkeys scramble overhead'—Surajben Babubhai Patni sells tomatoes, corn and nuts from a makeshift shelter: 'She makes as much as 250 rupees a day, or about $5, but it's enough to feed her household of nine, including her son, who recently lost his job as a diamond polisher.' Enough: really? Five dollars for nine people is less than half the amount the World Bank sets as the benchmark above extreme poverty: one dollar per capita per day. Landless households in villages to the south of Ahmedabad have to make do with even less than that—on the days they manage to find work.[3]

Earlier this year I returned to the former mill districts of the city to see how the economic crisis was affecting people there. By 2000, these former working-class neighbourhoods had already degenerated into pauperized quarters. But the situation has deteriorated markedly even since then. Take the condition of the garbage pickers—all of them women, since this is not considered to be man's work. They are now paid half what

[1] 'Decent Work and the Informal Economy', International Labour Organization, Geneva 2002; *Report on the Conditions of Work and Promotion of Livelihoods in the Unorganised Sector*, National Commission for Enterprises in the Unorganised Sector, Government of India, New Delhi 2008.
[2] Patrick Barta, 'Global Economics: The Rise of the Underground', *Wall Street Journal*, 14 March 2009.
[3] Breman, *The Poverty Regime in Village India*, Delhi 2007.

TABLE I: *Prices paid to Ahmedabad waste collectors*

Items	Price in Rs/kilo April 2008	Price in Rs/kilo Jan 2009	Percentage decrease
Waste steel	6	3	50
Steel sheets	10	5	50
Plastic bags	8	5	37.5
Newspaper	8	4	50
Hard plastic	15	7	53
Soft plastic	10	4	60
Dry bones	4	2	50
Waste hair	1,000	300	67

Source: *We the Self-Employed*, SEWA, No. 18, 15 May 2009.

they used to get for the harvest of paper, rags and plastic gleaned from the waste dumps in their daily rounds. To make up the loss, they now begin their work at 3 AM instead of at 5 AM, bringing along their children to provide more hands. The Self-Employed Women's Association—which started to organize informal-sector workers in the city and has now expanded its activities across India and even beyond—reports that 'incomes have declined, days of work decreased, prices have fallen and livelihoods disappeared'.[4] Their recent newsletter presents statistics testifying to the crash in prices for the 'goods' collected on the dumps.

A SEWA activist based in Ahmedabad reports on the anguish she met when visiting local members. One of these, Ranjanben Ashokbhai Parmar, started to cry: 'Who sent this recession! Why did they send it?'

> I was speechless. Her situation is very bad, her husband is sick, she has 5 children, she stays in a rented house, she has to spend on the treatment of her husband and she is the sole earner in the family, how can she meet her ends? When she goes to collect scrap she takes along her little daughter, while her husband sits at home and makes wooden ice-cream spoons, from which he can earn not more than Rs. 10/- a day.

[4] *We the Self-Employed*, SEWA, No. 18, 15 May 2009.

In the industrial city of Surat, 120 miles south of Ahmedabad, half the informal labour force of the diamond workshops was laid off overnight at the end of 2008, with the collapse of worldwide demand for jewels. Some 200,000 diamond cutters and polishers found themselves jobless, while the rest had to contend with drastic reductions in hours and piece-rates. A wave of suicides swept the dismissed workers, who—with a monthly income of little more than $140—were reputed to belong to the most skilled and highest paid ranks of the informal economy. These bitter experiences of the recession-struck informal economy in Gujarat can be repeated for region after region across India, Africa and much of Latin America. Confronted with such misery it is impossible to concur with the World Bank and *Wall Street Journal*'s optimism about the sector's absorptive powers. As for their praise for the 'self-reliance' of those struggling to get by in these conditions: living in a state of constant emergency saps the energy to cope and erodes the strength to endure. To suggest that these workers constitute a 'vibrant' new class of self-employed entrepreneurs, ready to fight their way upward, is as misleading as portraying children from the *chawls* of Mumbai as slumdog millionaires.

Rural rope's end

The second option currently being touted by the Western media as a 'cushion for hard times' is a return to the countryside. As an Asian Development Bank official in Thailand recently informed the *International Herald Tribune*, 'returning to one's traditional village in the countryside is a sort of "social safety net"'. The complacent assumption is that large numbers of rural migrants made redundant in the cities can retreat to their families' farms and be absorbed in agricultural work, until they are recalled to their urban jobs by the next uptick of the economy. The IHT evokes a paradisial rural hinterland in northeast Thailand. Even in the dry season,

> there are still plenty of year-round crops—gourds, beans, coconuts and bananas among them—that thrive with little rainwater. Farmers raise chickens and cows, and dig fish ponds behind their homes . . . Thailand's king, Bhumibol Adulyadej, has long encouraged such self-sufficiency.[5]

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[5] Thomas Fuller, 'In Southeast Asia, Unemployed Abandon Cities for Their Villages', *International Herald Tribune*, 28 February 2009.

Similar views were published at the time of the Asian financial crisis in 1997. Then, World Bank consultants assumed that agriculture could act as a catchment reservoir for labour made redundant in other sectors, based on the notion that the army of migrants moving back and forth between the country and urban-growth poles had never ceased their primary occupation. The myth persisted that Southeast Asian countries were still essentially peasant societies. These tillers of the land might go to the city to earn extra wages for cash expenditure, but if they lost their jobs they were expected to reintegrate into the peasant economy with no difficulty. This was far from the case, as I wrote then.[6]

Returning to West Java this summer, I listened to the latest stories of men and women who had come back to the village, having lost their informal-sector jobs elsewhere, and find no work here, either. Of course not: they were driven out of the village economy in the first place because of lack of land or other forms of capital. There is no family farm to fall back on. The departure of the landless and the land-poor was a flight, part of a coping strategy. Now that the members of this rural proletariat have become redundant in Jakarta or Bangkok, or as contract workers in Taiwan or Korea for that matter, they are back to square one, due to an acute and sustained lack of demand for their labour power in their place of origin. A comparable drama is taking place in China. Out of the 120 to 150 million migrants who made the trek from the rural interior to the rapidly growing coastal cities during the last twenty-five years, official sources report that about 10 to 15 million are now unemployed. For these victims of the new economy, there is no alternative but to go back 'home' to a deeply impoverished countryside.

The Asian village economy is not capable of accommodating all those who possess no means of production; nor has the urban informal sector the elasticity to absorb all those eager to drift into it. According to policymakers' notions of cross-sectoral mobility, the informal economy should swallow up the labour surplus pushed out of higher-paid jobs, enabling the displaced workforce to stick it out through income-sharing arrangements until the economic tide turned again. I have never found any evidence that such a horizontal drift has taken place. Street vendors do not turn into *becak* riders, domestic servants or construction

[6] See Breman and Gunawan Wiradi, *Good Times and Bad Times in Rural Java: Socio-economic Dynamics in Two Villages towards the end of the Twentieth Century*, Leiden 2002.

workers overnight. The labour market of the informal sector economy is highly fragmented; those who are laid off in their branch of activity have no alternative but to go back 'home', because staying on in the city without earnings is next to impossible. But returning to their place of origin is not a straightforward option, given the lack of space in the rural economy. Nevertheless, my informants do not simply lay the blame for their predicament on the economic meltdown. From the perspective of the world's underclasses, what looks like a conjunctural crisis is actually a structural one, the absence of regular and decent employment. The massive army of reserve labour at the bottom of the informal economy is entrapped in a permanent state of crisis which will not be lifted when the Dow Jones Index goes up again.

New economic order

The transformation that took place in 19th-century Western Europe, as land-poor and landless peasants migrated to the towns, is now being repeated on a truly global scale. But the restructuring that would create an industrial-urban order, of the sort which vastly improved the lot of the former peasants of the Northern hemisphere, has not materialized. The ex-peasants of the South have failed to find secure jobs and housing on their arrival in the cities. Struggling to gain a foothold there, they have become mired for successive generations in the deprivation of the shanties, a vast reserve army of informal labour.

In the 1960s and 70s, Western policymakers viewed the informal sector as a waiting room, or temporary transit zone: newcomers could find their feet there and learn the ways of the urban labour market. Once savvy to these, they would increasingly be able to qualify for higher wages and more respectable working conditions. In fact the trend went in the opposite direction, due in large part to the onslaught of market-driven policies, the retreat of the state in the domain of employment and the decisive weakening of organized labour. The small fraction that made their way to the formal sector was now accused of being a labour aristocracy, selfishly laying claim to privileges of protection and security. At the same time, the informal sector began to be heralded by the World Bank and other transnational agencies as a motor of economic growth. Flexibilization became the order of the day—in other words, dismantling of job security and a crackdown on collective bargaining. The process of informalization that has taken shape over the last twenty

years saw, among other things, the end of the large-scale textile industry in South Asia. In Ahmedabad itself, more than 150,000 mill workers were laid off at a stroke. This did not mean the end of textile production in the city. Cloth is now produced in power-loom workshops by operators who work 12-hour days, instead of 8, and at less than half the wages they received in the mill; garment manufacture has become home-based work, in which the whole family is engaged day and night. The textile workers' union has all but disappeared. Sliding down the labour hierarchy has plunged these households into a permanent state of crisis, both economic and social.

It is not only that the cost of labour at the bottom of the world economy has been scaled down to the lowest possible level; fragmentation also keeps the under-employed masses internally compartmentalized. These people are competitors in a labour market in which the supply side is now structurally larger than the—constantly fluctuating— demand for labour power. They react to this disequilibrium by trying to strengthen their ties along lines of family, region, tribe, caste, religion, or other primordial identities which preclude collective bargaining on the basis of work status and occupation. Their vulnerability is exacerbated by their enforced rootlessness: they are pushed off the land, but then pushed back onto it again, roaming around in an endless search for work and shelter.

The emergence of the early welfare state in the Western hemisphere at the end of the nineteenth century has been attributed to the bourgeoisie's fear that the policy of excluding the lower ranks of society could end in the collapse of the established order.[7] The propertied part of mankind today does not seem to be frightened by the presence of a much more voluminous *classe dangereuse*. Their appropriation of ever-more wealth is the other side of the trend towards informalization, which has resulted in the growing imbalance between capital and labour. There are no signs of change of direction in this economic course. Promises of poverty reduction by global leaders are mere lip service, or photo-opportunities. During his campaign, Obama would once in a while air his appreciation for Roosevelt's New Deal. Since his election the idea of a broad-based social welfare scheme has been

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[7] Abram de Swaan, *In Care of the State; Health Care, Education and Welfare in Europe and the USA in the Modern Era*, Cambridge and New York 1988.

shelved without further ado. The global crisis is being tackled by a massive transfer of wealth from poor to rich. The logic suggests a return to nineteenth-century beliefs in the principle and practice of natural inequality. On this view, it is not poverty that needs to be eradicated. The problem is the poor people themselves, who lack the ability to pull themselves up out of their misery. Handicapped by all kinds of defects, they constitute a useless residue and an unnecessary burden. How to get rid of this ballast?

Human evolution

Why music?
Dec 18th 2008
From The Economist print edition

Biologists are addressing one of humanity's strangest attributes, its all-singing, all-dancing culture

"IF MUSIC be the food of love, play on, give me excess of it." And if not? Well, what exactly is it for? The production and consumption of music is a big part of the economy. The first use to which commercial recording, in the form of Edison's phonographs, was to bring music to the living rooms and picnic tables of those who could not afford to pay live musicians. Today, people are so surrounded by other people's music that they take it for granted, but as little as 100 years ago singsongs at home, the choir in the church and fiddlers in the pub were all that most people heard.

Other appetites, too, have been sated even to excess by modern business. Food far beyond the simple needs of stomachs, and sex (or at least images of it) far beyond the needs of reproduction, bombard the modern man and woman, and are eagerly consumed. But these excesses are built on obvious appetites. What appetite drives the proliferation of music to the point where the average American teenager spends 1½-2½ hours a day—an eighth of his waking life—listening to it?

Well, that fact—that he, or she, is a teenager—supports one hypothesis about the function of music. Around 40% of the lyrics of popular songs speak of romance, sexual relationships and sexual behaviour. The Shakespearean theory, that music is at least one of the foods of love, has a strong claim to be true. The more mellifluous the singer, the more dexterous the harpist, the more mates he attracts.

A second idea that is widely touted is that music binds groups of people together. The resulting solidarity, its supporters suggest, might have helped bands of early humans to thrive at the expense of those that were less musical.

Both of these ideas argue that musical ability evolved specifically—that it is, if you like, a virtual organ as precisely crafted to its purpose as the heart or the spleen. The third hypothesis, however, is that music is a cross between an accident and an invention. It is an accident because it is the consequence of abilities that evolved for other purposes. And it is an invention because, having thus come into existence, people have bent it to their will and made something they like from it.

She loves you

Shakespeare's famous quote was, of course, based on commonplace observation. Singing, done well, is certainly sexy. But is its sexiness the reason it exists? Charles Darwin thought so. Twelve years after he published "On the Origin of Species", which described the idea of natural selection, a second book hit the presses. "The Descent of Man and Selection in Relation to Sex" suggested that the need to find a mate being the pressing requirement that it is, a lot of the features of any given animal have come about not to aid its survival, but to aid its courtship. The most famous example is the tail of the peacock. But Darwin suggested human features, too, might be sexually selected in this way—and one of those he lit on was music.

In this case, unlike that of natural selection, Darwin's thinking did not set the world alight. But his ideas were revived recently by Geoffrey Miller, an evolutionary biologist who works at the University of New Mexico. Dr Miller starts with the observations that music is a human universal, that it is costly in terms of time and energy to produce, and that it is, at least in some sense, under genetic control. About 4% of the population has "amusia" of one sort or another, and at least some types of amusia are known to be heritable. Universality, costliness and genetic control all suggest that music has a clear function in survival or reproduction, and Dr Miller plumps for reproduction.

One reason for believing this is that musical productivity—at least among the recording artists who have exploited the phonograph and its successors over the past hundred years or so—seems to match the course of an individual's reproductive life. In particular, Dr Miller studied jazz musicians. He found that their output rises rapidly after puberty, reaches its peak during young-adulthood, and then declines with age and the demands of parenthood.

As is often the case with this sort of observation, it sounds unremarkable; obvious, even. But uniquely human activities associated with survival—cooking, say—do not show this pattern. People continue to cook at about the same rate from the moment that they have mastered the art until the moment they die or are too decrepit to continue. Moreover, the anecdotal evidence linking music to sexual success is strong. Dr Miller often cites the example of Jimi Hendrix, who had sex with hundreds of groupies during his brief life and, though he was legally unmarried, maintained two long-term liaisons. The words of Robert Plant, the lead singer of Led Zeppelin, are also pertinent: "I was always on my way to love. Always. Whatever road I took, the car was heading for one of the greatest sexual encounters I've ever had."

**Anecdotal evidence
linking music to
sexual success is
strong**

Another reason to believe the food-of-love hypothesis is that music fulfils the main criterion of a sexually selected feature: it is an honest signal of underlying fitness. Just as unfit peacocks cannot grow splendid tails, so unfit people cannot sing well, dance well (for singing and dancing go together, as it were, like a horse and carriage) or play music well. All of these activities require physical fitness and dexterity. Composing music requires creativity and mental agility. Put all of these things together and you have a desirable mate.

Improve your singing...

A third reason to believe it is that music, or something very like it, has evolved in other species, and seems to be sexually selected in those species, too. Just as the parallel evolution of mouse-like forms in marsupial and placental mammals speaks of similar ways of life, so the parallel evolution of song in birds, whales and gibbons, as well as humans, speaks of a similar underlying function. And females of these animals can be fussy listeners. It is known from several species of birds, for example, that females prefer more complex songs from their suitors, putting males under pressure to evolve the neurological apparatus to create and sing them.

And yet, and yet. Though Dr Miller's arguments are convincing, they do not feel like the whole story. A man does not have to be gay to enjoy the music of an all-male orchestra, even if he particularly appreciates the soprano who comes on to sing the solos. A woman, meanwhile, can enjoy the soprano even while appreciating the orchestra on more than one level. Something else besides sex seems to be going on.

The second hypothesis for music's emergence is that it had a role not just in helping humans assess their mates, but also in binding bands of people together in the evolutionary past. Certainly, it sometimes plays that role today. It may be unfashionable in Britain to stand for the national anthem, but two minutes watching the Last Night of the Proms, an annual music festival, on television will serve to dispel any doubts about the ability of certain sorts of music to instil collective purpose in a group of individuals. In this case the cost in time and energy is assumed to be repaid in some way by the advantages of being part of a successful group.

The problem with this hypothesis is that it relies on people not cheating

and taking the benefits without paying the costs. One way out of that dilemma is to invoke a phenomenon known to biologists as group selection. Biologically, this is a radical idea. It requires the benefits of solidarity to be so great that groups lacking them are often extinguished en bloc. Though theoretically possible, this is likely to be rare in practice. However, some researchers have suggested that the invention of weapons such as spears and bows and arrows made intertribal warfare among early humans so lethal that group selection did take over. It has been invoked, for example, to explain the contradictory manifestations of morality displayed in battle: tenderness towards one's own side; ruthlessness towards the enemy. In this context the martial appeal of some sorts of music might make sense.

Robin Dunbar of Oxford University does not go quite that far, but unlike Dr Miller he thinks that the origins of music need to be sought in social benefits of group living rather than the sexual benefits of seduction. He does not deny that music has gone on to be sexually selected (indeed, one of his students, Konstantinos Kaskatis, has shown that Dr Miller's observation about jazz musicians also applies to 19th-century classical composers and contemporary pop singers). But he does not think it started that way.

...and your grooming
Much of Dr Dunbar's career has been devoted to trying to explain the development of sociality in primates. He believes that one of the things that binds groups of monkeys and apes together is grooming. On the face of it, grooming another animal is functional. It keeps the pelt clean and removes parasites. But it is an investment in someone else's well-being, not your own. Moreover, animals often seem to groom each other for far longer than is strictly necessary to keep their fur pristine. That time could, in principle, be used for something else. Social grooming, rather like sexual selection, is therefore a costly (and thus honest) signal. In this case though, that signal is of commitment to the group rather than reproductive prowess.

Dr Dunbar thinks language evolved to fill the role of grooming as human tribes grew too large for everyone to be able to groom everyone else. This is a controversial hypothesis, but it is certainly plausible. The evidence suggests, however, that the need for such "remote grooming" would arise when a group exceeds about 80 individuals, whereas human language really got going when group sizes had risen to around 140. His latest idea is that the gap was bridged by music, which may thus be seen as a precursor to language.

The costliness of music—and of the dancing associated with it—is not in doubt, so the idea has some merit. Moreover, the idea that language evolved from wordless singing is an old one. And, crucially, both singing

and dancing tend to be group activities. That does not preclude their being sexual. Indeed, showing off to the opposite sex in groups is a strategy used by many animals (it is known as lekking). But it may also have the function of using up real physiological resources in a demonstration of group solidarity.

Like cheesecake, music sates an appetite that nature cannot

By side-stepping the genocidal explanations that underlie the classical theory of group selection, Dr Dunbar thinks he has come up with an explanation that accounts for music's socially binding qualities without stretching the limits of evolutionary theory. Whether it will pass the mathematical scrutiny which showed that classical group selection needs genocide remains to be seen. But if music is functional, it may be that sexual selection and social selection have actually given each other a helping hand.

The third hypothesis, though, is that music is not functional, and also that Dr Dunbar has got things backwards. Music did not lead to language, language led to music in what has turned out to be a glorious accident—what Stephen Jay Gould called a spandrel, by analogy with the functionless spaces between the arches of cathedrals that artists then fill with paintings. This is what Steven Pinker, a language theorist at Harvard, thinks. He once described music as auditory cheesecake and suggested that if it vanished from the species little else would change.

Dr Pinker's point is that, like real cheesecake, music sates an appetite that nature cannot. Human appetites for food evolved at a time when the sugar and fat which are the main ingredients of cheesecake were scarce. In the past, no one would ever have found enough of either of these energy-rich foods to become obese, so a strong desire to eat them evolved, together with little limit beyond a full stomach to stop people eating too much. So it is with music. A brain devoted to turning sound into meaning is tickled by an oversupply of tone, melody and rhythm. Singing is auditory masturbation to satisfy this craving. Playing musical instruments is auditory pornography. Both sate an appetite that is there beyond its strict biological need.

Of course, it is a little more complicated than that. People do not have to be taught to like cheesecake or sexy pictures (which, in a telling use of the language, are sometimes also referred to as "cheesecake"). They do,

however, have to be taught music in a way that they do not have to be taught language.

Words and music
Aniruddh Patel, of the Neurosciences Institute in San Diego, compares music to writing, another widespread cultural phenomenon connected with language. True language—the spoken languages used by most people and the gestural languages used by the deaf—does not have to be taught in special classes. The whole of a baby's world is its classroom. It is true that parents make a special effort to talk to their children, but this is as instinctive as a young child's ability (lost in his early teens) to absorb the stuff and work out its rules without ever being told them explicitly.

Learning to write, by contrast, is a long-winded struggle that many fail to master even if given the opportunity. Dyslexia, in other words, is common. Moreover, reading and writing must actively be taught, usually by specialists, and evidence for a youthful critical period when this is easier than otherwise is lacking. Both, however, transform an individual's perception of the world, and for this reason Dr Patel refers to them as "transformative technologies".

In difficulty of learning, music lies somewhere in between speaking and writing. Most people have some musical ability, but it varies far more than their ability to speak. Dr Patel sees this as evidence to support his idea that music is not an adaptation in the way that language is, but is, instead, a transformative technology. However, that observation also supports the idea that sexual selection is involved, since the whole point is that not everyone will be equally able to perform, or even to learn how to do so.

Do they know it's Christmas?
What all of these hypotheses have in common is the ability of music to manipulate the emotions, and this is the most mysterious part of all. That some sounds lead to sadness and others to joy is the nub of all three hypotheses. The singing lover is not merely demonstrating his prowess; he also seeks to change his beloved's emotions. Partly, that is done by the song's words, but pure melody can also tug at the heart-strings. The chords of martial music stir different sentiments. A recital of the Monteverdi Vespers or a Vivaldi concerto in St Mark's cathedral in Venice, the building that inspired Gould to think of the non-role of spandrels, generates emotion pure and simple, disconnected from human striving.

This is an area that is only beginning to be investigated. Among the pioneers are Patrik Juslin, of Uppsala University, and Daniel Vastfjall, of Gothenburg University, both in Sweden. They believe they have identified six ways that music affects emotion, from triggering reflexes in the brain

stem to triggering visual images in the cerebral cortex.

Such a multiplicity of effects suggests music may be an emergent property of the brain, cobbled together from bits of pre-existing machinery and then, as it were, fine-tuned. So, ironically, everyone may be right—or, at least partly right. Dr Pinker may be right that music was originally an accident and Dr Patel may be right that it transforms people's perceptions of the world without necessarily being a proper biological phenomenon. But Dr Miller and Dr Dunbar may be right that even if it originally was an accident, it has subsequently been exploited by evolution and made functional.

Part of that accident may be the fact that many natural sounds evoke emotion for perfectly good reasons (fear at the howl of a wolf, pleasure at the sound of gently running water, irritation and mother-love at the crying of a child). Sexually selected features commonly rely on such pre-existing perceptual biases. It is probably no coincidence, for instance, that peacocks' tails have eyespots; animal brains are good at recognising eyes because eyes are found only on other animals. It is pure speculation, but music may be built on emotions originally evolved to respond to important natural sounds, but which have blossomed a hundred-fold.

The truth, of course, is that nobody yet knows why people respond to music. But, when the carol singers come calling, whether the emotion they induce is joy or pain, you may rest assured that science is trying to work out why.

DAVID LOCKE

Science as Writing

Yale

University

Press

New Haven

and

London

CONTENTS

THERE ARE NO IDEAS THAT DO NOT IMPINGE ON A WORLD OF OTHER ideas, and that is certainly true of the ideas expressed here. Thus, within literary studies, there has been a continual extension and broadening of the boundaries of the canon in the twentieth century. Much to the chagrin of those dedicated obstinately to the preservation of "standards," literary scholars have turned their attention from the classical to the vernacular literatures, from the ancients to the moderns, even the postmoderns. The literatures of the third world have for some time been in vogue, and a generation of feminist critics has challenged the patriarchal monopoly of the canon. There are many now who no longer feel constrained not to examine even the popular, the ephemeral.

Similarly, from the perspective of literary studies, and also within the disciplines themselves, the various bodies of professional, functional discourse have come increasingly under scrutiny as language, not as the mere conveyors of ideas. For philosophy, language has always been a fit subject for study, and philosophers long ago learned not to exempt their own discourse from their analyses. Now they have redoubled their attention. History, as is well known, is undergoing its own convulsive reconsideration of its methods, including the problem of writing. Paramount, here, of course, is concern over the character of historical narrative, but the matter of style, too, plays its part; one thinks at once of historian Peter Gay's 1974 *Style in History*. The human sciences—to

borrow the European term — find their discourses coming increasingly under examination. Indeed, Donald McCloskey's 1985 *Rhetoric of Economics* is one of the first in a projected series, Rhetoric of the Human Sciences.

In such a climate, it is hardly surprising that the languages of the hard sciences should come finally to lose — or at least to find questioned — their privileged position as pure functional notation, as mere shorthand records of observations made and experiments performed. That such questioning, such challenging, is currently underway, is the raison d'être for this book, and it is intended to make its own contribution to the argument.

If, as it seems, no body of discourse is especially privileged — is able to operate simply as a vehicle for the untrammeled expression of its ideas — any text which makes that argument suffers from the debilitating paradox that it employs language it assumes operates precisely as it argues language cannot operate. Short of silence, or self-conscious reference to this dilemma with every statement made, there seems little choice but to proceed, as this work does, knowing that the argument is problematized by its very existence as discourse, but knowing also that, like all argument, however problematized, it is worth making if it wins assent. Discourse, imperfect though it may be, proceeds if human activity is to proceed.

To present the argument, I have selected material from a variety of sources, choosing scientific writings from various disciplines, times, and places, including some of those classic scientific texts that have entered the realm of key cultural documents, variously designated as "great" books. The argument can be made — has been made — that such texts, like Darwin's *Origin of Species*, in surviving to become classics no longer are read strictly as scientific documents but rather have acquired a special status as literature, a status that supposedly sets them apart from the ordinary, functional works of science. We will return to this point, but let me say here that I do not believe that any special qualities of such texts can be divorced from the essential features that permitted them to function effectively in their own time and place. Although it is true that readings vary with readers — that every age, as they say, reads Shakespeare in its own way — that is not to say that new readings give old texts qualities they did not always possess in posse. The musicianship in Bach's church music does not spring into being only when those works are played in the modern concert hall; that musicianship is what made them successful, functional works in their original environment. Similarly with scientific works: the text of the *Origin* we read with so much appreciation today is not entirely different from the text perused with such avidity by Darwin's contemporaries. Nonetheless,

I have tried to include a variety of illustrative materials because my argument is a general one, which applies whenever and by whomever scientific texts are read. I do not contend that every scientific document is read the same way, nor that any one scientific document is read the same way by every reader, but I do assert that every scientific text must be *read*, that it is *writing*, not some privileged verbal shorthand that conveys a pure and unvarnished scientific truth.

There is an increasing number of scientists for whom this argument will not be news; there are historians and philosophers of science who have been making essentially the same point for some time; and a number of literary scholars are now bringing to bear on scientific texts precisely the kind of scrutiny that is called for here. It is not to these persons that this volume is addressed, though I hope they will welcome a general statement of the basic assumptions on which, in many cases, their own work is based. Rather, it is directed toward those who are not yet convinced — that body of scientists who continue to believe that their language does not much matter, that it is merely the empty vessel into which the content of their scientific thought is poured; and those literary persons who see scientific texts as something else, something apart from the texts they examine, those patterns of signs, those intricate interpenetrating laceworks of codes, which they, and we, characterize as literary works.

I should like to acknowledge here my debts to those who have made the preparation of this text possible. A sabbatical year from the University of Florida permitted me to complete the first draft of the manuscript. A number of colleagues, namely Alistair Duckworth, John Leavey, Jack Perlette, Ellie Ragland-Sullivan, and my old friend John R. Nabholtz have thoughtfully commented on individual chapters of an earlier version of the text. I am extremely grateful to Melvyn New for plowing through that longer and considerably more cumbersome manuscript in its entirety and giving me his trenchant and helpful criticism. I also am much indebted to my new friend Roald Hoffmann for his helpful advice, as I am to several anonymous reviewers of the manuscript. I am especially grateful to George Levine for his detailed and helpful critique. David Loewus of *Angewandte Chemie* provided numerous editorial suggestions, and my colleague John Van Hook abundant bibliographic assistance. And I thank Marie Nelson and Muriel Burks for coping with several equally untidy versions of the manuscript and wedging them into those tiny disks. That I have managed to err in

CHAPTER ONE

Introduction: Science and Literature

N DECEMBER 1817, AT A DINNER THAT THE HOST, PAINTER BENJAMIN Robert Haydon, has characterized as "immortal," Charles Lamb bibulously chided his host for including the visage of Sir Isaac Newton in his *Jerusalem*. John Keats promptly joined Lamb in declaring that Newton had "destroyed all the poetry of the rainbow by reducing it to the prismatic colours." The tipsy company then drank "Newton's health, and confusion to mathematics," affirming once again the great gulf between poetry and science.[1]

Science and poetry. Which two human endeavors can be more unlike? The one, cold, precise, factual; the other, warm, impressionistic, imaginative. And their practitioners: the poet—impassioned, frenzied, inspired; the scientist—aloof, calculating, deliberate. Or so the stereotypes go. And, though like all stereotypes they do not represent the truth, like all stereotypes they seem to carry more than a touch of the truth with them.

For three decades it has been fashionable to deny, or at least, to decry, C. P. Snow's division of the learned world into two camps, two "cultures," science and the humanities.[2] That the denial still seems necessary is because the thesis still appears to most of us so patently, so obviously, true, and its consequences—for anyone concerned about the humanness of our existence—so profoundly troublesome. It is unthinkable that our best intellectual efforts should be so forever split. Unthinkable; but inevitable?

spite of the assistance and the corrections of these individuals I trust will not be held against them.

Finally, I must note that like many others writing in a field that is suddenly deluged with newly published material, I have had to include only citations to new works that ideally would have found their way more integrally into my discussion.

SCIENCE AS WRITING

Perhaps not. The long tradition of a great, impassable gulf between science and literature³ is accompanied by another tradition—equally venerable, though less prominent—that sees the two as sister occupations, proceeding as it were hand in hand in their pursuit of the secrets of the world. Thus, William Wordsworth was present at Haydon's immortal dinner but was, as Haydon reminded him in a letter years later, reluctant to join in the toast of "confusion" to Newton.⁴ Indeed, in the famous Preface to the *Lyrical Ballads*, Wordsworth is at some pains to reconcile science and poetry: "If the labours of Men of science should ever create any material revolution . . . , the Poet will be at [their] side, carrying sensation into the midst of the objects of science itself."⁵

Indeed, the writing in verse of natural philosophy—science—constitutes virtually a literary genre of its own, with such notable practitioners down the years as Empedocles (Aristotle warns us not to consider him a poet comparable to Homer);⁶ Lucretius, the laureate of the atom; and the redoubtable Dr. Erasmus Darwin, grandfather of Charles Robert. Our own age favors the bellettristic scientific essay, penned by, say, Loren Eiseley or Lewis Thomas, suggestive evidence in any case that scientific writings *can* be literature.

A tradition, then, and a countertradition: one asserts that science and literature are opposed; the other—of growing significance, this book will argue—that they are akin.

2

If, as the tradition asserts, scientist and poet do inhabit different cultures, live different lives, then their respective writings—the papers of the scientist and the poems of the poet—are, it would seem, incommensurable, that is, so unlike one another in every respect that they are simply not to be compared. Such a judgment should surely, one might think, end the matter. But often, in fact, within the tradition, scientific writings and poetry (imaginative literature generally) are compared or contrasted, each in effect being used to define, delimit, and characterize the other.

Thus, it has long been something of a commonplace in literary studies to begin by marking off the language of literature from that of science, the purpose being to describe literature more precisely, to lay out its particularities for further study. In such discussions, scientific language is taken as the opposite extreme, most remote from, and in its characteristics most opposed to, literary language. The point is best illustrated perhaps by a

passage from René Wellek and Austin Warren's *Theory of Literature*, a 1940s text that helped shape the thinking of several generations of English graduate students (many of them the literary theorists and practicing critics of today):

> Scientific language tends toward such a system of signs as mathematics or symbolic logic. Its ideal is such a universal language as the *characteristica universalis* which Leibniz had begun to plan as early as the late seventeenth century. Compared to scientific language, literary language will appear in some ways deficient. It abounds in ambiguities; it is, like every other historical language, full of homonyms, arbitrary or irrational categories such as grammatical gender; it is permeated with historical accidents, memories, and associations. In a word, it is highly "connotative." Moreover, literary language is far from merely referential. It has its expressive side; it conveys the tone and attitude of the speaker or writer. And it does not merely state and express what it says; it also wants to influence the attitude of the reader, persuade him, and ultimately change him. There is a further important distinction between literary and scientific language: in the former, the sign itself, the sound symbolism of the word, is stressed. All kinds of techniques have been invented to draw attention to it, such as metre, alliteration, and patterns of sound.⁷

The essential distinction between the two uses of language is still being drawn in some circles today. Thus, in an essay entitled "Literature and Science," published in 1982 in the Modern Language Association's *Interrelations of Literature*, George Slusser and George Guffey begin by differentiating the two modes of discourse on the basis that one, the literary, is primarily perceptual (that is, interesting to perceive), whereas the other, the scientific, is largely conceptual (that is, valuable for the message it conveys).⁸ Nor is this an isolated instance. In an article entitled "Art and Science: Do They Need To Be Yoked?" Leo Steinberg's answer to his own rhetorical question is "no," suggesting that the two are simply too different to be "yoked."⁹ And in presenting "The Rhetorical Case against a Theory of Literature and Science," Mark Kipperman argues that the two bodies of discourse "not only cannot be 'reconciled' but also that they must not be." He adds, "While both literature and science may . . . use metaphor and share similar linguistic structures, the rhetorical directions of the two activities are not only different, they are opposed."¹⁰

And, just as the traditional literary scholar seems intent on marking off the literary domain from the writings of science, so the traditional scientist

appears not reluctant to return the compliment. From its beginnings, modern science has sought to achieve a mode of discourse conspicuously free of literary affectations. Although Thomas Sprat was not in any sense of the term himself a scientist, his often-cited remarks from the *History of the Royal Society* surely reflect the intention, if not quite the practice, of his confreres in that august body. After heatedly (and at some length) denouncing the "superfluity of talking" that has "overwhelm'd most other *Arts* and *Professions*," Sprat goes on to praise the custom of the Royal Society:

> They have therefore been most rigorous in putting in execution, the only Remedy, that can be found for this *extravagance*: and that has been, a constant Resolution, to reject all the amplifications, digressions, and swellings of style: to return back to the primitive purity, and shortness, when men deliver'd so many *things*, almost in an equal number of *words*. They have exacted from all their members, a close, naked, natural way of speaking; positive expressions; clear senses; a native easiness: bringing all things as near the Mathematical plainness, as they can: and preferring the language of Artizans, Countrymen, and Merchants, before that, of Wits, or Scholars.[11]

Today's college or university student of science (or technology) is likely to take a course labeled "technical writing" intended not, as the name might suggest, to train students for employment as technical writers but rather to prepare them for the writing they will do as part of their professional activities. Significantly, textbooks for such courses often begin by drawing the same kinds of distinctions between scientific and literary writing that traditional textbooks of literature draw. Thus, a typical textbook differentiates literature and scientific writing in terms that are reminiscent of those of Wellek and Warren:

> This important distinction [between the subjective and the objective] corresponds to the difference between literature and technical writing. Literature is an interpretive record of human progress and is based on imaginative and emotional experiences rather than the factual record of human achievements. Technical writing, however, is not history. (History is a record of our past; it subjectively interprets and offers value judgments about the past.) Literature is concerned mainly with our thoughts, feelings, and reactions to experiences. Its purpose is to give us insight. Technical writing concerns itself solely with factual information; its language does not appeal to the emotions nor to the imagination, but to the intellect. Its words are exact and

precise, and its primary purpose is to inform. Its information is the activity and progress of science and technology.[12]

Although the Whiggish attitude of this passage toward scientific progress and its blanket attribution of subjectivity to historical writing may not meet with universal approbation, it probably reflects the attitude toward their language of traditionalist scientists of our day, as well as those of Thomas Sprat's. Roland Barthes has perhaps best described this view of the scientist's attitude toward his or her writing:

> As far as science is concerned language is simply an instrument, which it profits it to make as transparent and neutral as possible: it is subordinate to the matter of science (workings, hypotheses, results) which, so it is said, exists outside language and precedes it. On the one hand and *first* there is the content of the scientific message, which is everything; on the other hand and *next*, the verbal form responsible for expressing that content, which is nothing.[13]

Yet, this by now familiar view of science versus literature, which one sees in both literary and scientific circles, has, as already noted, its strong counterview, science *and* literature, akin in aims and methods. This counterview—this countertradition—is being increasingly enunciated, and it is the thesis of this book that the counter-tradition deserves the attention of scientist and humanist alike, as well as of all who are simply interested in the makings of our culture.

3

In the literary critical world, the countertradition, like the tradition, has its venerable side. The Renaissance literary critic, for example, responding to the "new science," was likely to note something of the ambiguous kinship of literature and science. Thus, Sir Philip Sidney likens (and differentiates) poetry and science. The poet, Sidney says, "yields to the powers of the mind an image of that whereof the philosopher [scientist] bestows but a wordish description."[14]

With many contemporary critics the tendency to liken literature to science, or at least to downplay their differences, is even more marked. Not that such critics would speak for the scientific objectivity of literature, but rather that they would proceed from a judgment necessitated in some areas of science—most notably quantum mechanics—that the ultimate objectivity of certain classes of scientific observation cannot be maintained. As

Wayne Booth says, "Now that the scientists have given up the claim that they are seeking one single formulation of a firmly constituted reality, unaffected by the limitations and interests of the observer, perhaps we [in literature] should once again pack up our bags and follow after."[15]

Indeed, it is part of the countertraditional argument that historically the discourses of literature and science were not conceptually severed until relatively modern times—"no earlier than the mid-eighteenth century," Stephen Weininger asserts.[16] "The bifurcation," G. S. Rousseau says, "is a figment of our post-Kantian imagination."[17]

Thus, within literary studies, early and late, a countertradition seeks to liken, not differentiate, science and literature. Turning now to science, we find the story is much the same: here, too, a countertradition minimizes the differences of science and literature, to as great a degree perhaps as the tradition maximizes them.

To begin with, some branches of science have themselves become increasingly self-conscious of their own use of language.[18] Thus, as noted, in quantum physics it has become firmly established that the findings are not independent of the system that yields them, including the apparatus of the science and the conceptualizations of the scientist. Here, even the "facts," those ultimate bits of "truth" the scientific method grinds out like sausages, become only quasifacts (queasy facts?) David Bohm, a theoretical physicist, speaks of the field: "Here, it is important to note that facts are not to be considered as if they were independently existent objects that we might find or pick up in the laboratory. . . . In a certain sense, we 'make' the fact. That is to say, beginning with immediate perception of an actual situation, we develop the fact by giving it further order, form and structure with the aid of our theoretical concepts."[19] Thus, quantum physicists have been forced to become self-conscious about their own formulations, to believe that what they *think* determines in some measure what they *perceive*. (All I would add to this view is that it is the *language* of their formulations that helps determine the shape of their pictures of the world.)

Much of the peculiarity of quantum mechanics stems from the fact that the machinations of the experimenters inevitably disturb the system with which they are experimenting. Similarly, in the social sciences there is a long tradition of uneasiness over the impact of the scientist-observer on the society under observation. Classically, in their discourse, social scientists have sought to minimize this effect by adopting an objective, impersonal tone and explicitly noting only in certain stylized ways the incidental effects of their impacts on their informants. Now, however, some ethnog-

raphers at least, troubled by the artificiality of this procedure and above all by its failure to deal with the complex realities of the interaction between the observer and the observed, are rethinking the nature of their texts and are experimenting with alternate modes of presentation. As a case in point, the recent *Writing Culture: The Poetics and Politics of Ethnography* presents a group of symposium papers dealing with ethnography essentially as *writing*. Collectively, the contributors to *Writing Culture* assert that ethnographic discourse, and presumably much of the discourse of social science, is not the bare, unselfconscious record of observed social circumstance the standard view of scientific discourse would claim it to be. As James Clifford, one of the editors of the collection, observes of the contributors: "Their focus on text making and rhetoric serves to highlight the constructed, artificial nature of cultural accounts."[20]

Both social science and quantum mechanics, however, may seem to be exceptional cases. Everyone knows that the world of the quantum is most peculiar (in terms of our everyday experience) and that the methodology of social science is soft compared to that of the hard sciences, like physics and chemistry. It is perhaps not surprising then that their respective bodies of discourse should themselves seem peculiar, unscientific. But even among the "regular" sciences there exists, alongside the positivist view of the scientific document as the factual record of things done, another, rather more sophisticated view, which recognizes the scientific report as, if not the equivalent of a literary work, at least something of a construct, a contrivance.

Here, for example, is the advice of chemist-writers Louis and Mary Fieser to a neophyte chemist on how to compose a scientific paper:

> Proper organization of a paper is of key importance, but no simple formula exists for achieving a forceful scheme of presentation. However, one approach which is to be avoided is narration of the whole chronology of work on a problem. The full story of a research may include an initial wrong guess, a false clue, a misinterpretation of directions, a fortuitous circumstance; such details possibly may have entertainment value in a talk on the research, but they are probably out of place in a formal paper. A paper should present, as directly as possible, the objective of the work, the results, and the conclusions; the chance happenings along the way are of little consequence in the permanent record. . . . Any simplification that can be achieved will certainly increase clarity and lighten the burden of the reader.[21]

Nor is this practice of manipulation of the material in scientific papers

something new that twentieth-century science has introduced. Newton, in the *Opticks*, confesses that the experiments he presents have been, at best, selected to make his points: "In the Description of these Experiments, I have set down such Circumstances, by which either the Phaenomenon might be render'd more conspicuous, or a Novice might more easily try them, or by which I did try them only."[22] This seems to imply that some of the experiments described never were performed precisely as reported; certainly it says that considerable selection has occurred in what is presented.

Both Newton and the Fiesers justify their decisions on the ground of clarity and simplicity. But some scientists are now willing to admit that this kind of artful presentation has a rhetorical effect, if not a consciously rhetorical purpose. Thus, one recent Nobel laureate, Sir Peter Medawar, remarks, "In retrospect we tend to forget the errors [committed in scientific research], so that 'The Scientific Method' appears very much more powerful than it really is, particularly when it is presented to the public in the terminology of breakthroughs, and to fellow scientists with the *studied hypocrisy* expected of a contribution to a learned journal" (emphasis added).[23] It is this "studied hypocrisy," this selecting, shaping, organizing, and arranging of the material to produce an effect — even an effect of clarity and directness of presentation, if not of "power" and infallibility — that certain scientists have come to recognize as signaling the nature of the scientific document.

The scientific paper, in this judgment, is not a simple tale of what was done in the laboratory, not a direct presentation of research carried out, but a crafted, shaped object, formulated within rules and conventions, some spoken (or written on the backs of scientific journals) and some tacitly understood. Or, as another recent Nobel laureate, Roald Hoffmann, puts it: "What is written in a scientific periodical is not a true and faithful representation (if such a thing were possible) of what transpired. It is not a laboratory notebook, and one knows that that notebook in turn is only a partially reliable guide to what took place. It is a more or less . . . carefully constructed man- or woman-made *text*."[24]

Thus, even within the body of science there are signs of a different, non-"standard" view of the texts of science, a view becoming increasingly widespread as those inside and outside science turn their attention to the discourse of science itself. Indeed, as historians, philosophers, and sociologists direct ever-closer scrutiny at the entire enterprise of science, they are bringing the discourse of science under new, more critical examination.

4

For some time, historians have eschewed the old-style history of science, with its Whiggish retrojection of the present, "perfect" state of science into the past and its hailing of the "discoverers" and "pioneers" who first enunciated and defended present views. What new-style historians of science seek to do is better understand the science of the past in its own terms, rather than judge it by how well it anticipates modern science.

Historians are coming, also, to focus on the discourse of science as significant, itself of interest. Thus, in his 1975 study, *The Chemists and the Word: The Didactic Origins of Chemistry*, Owen Hannaway examines the central role played by competing views of the "role of language in the explication of nature" in the emergence of chemistry as a discipline in the sixteenth and seventeenth centuries.[25] Similar attention to scientific language as a determinant of scientific content is given by Frederic L. Holmes, who demonstrates how Lavoisier's early notebook formulations of his ideas actually influenced the development of his research program.[26]

Philosophically, the edifice of positivist science has been under attack since the 1930s, when Karl Popper effectively challenged the notion that scientific hypotheses are proved, or verified, by the work that scientists do. Arguing that scientific statements can be only disproved, never proved, Popper makes falsification, not verification, the work of science. The best scientific statement has not been proved, it has simply been repeatedly tested and never falsified.

However it is viewed, the methodology of science has traditionally been sharply differentiated from that of the humanities: on the one hand, scientific discovery; on the other, hermeneutic inquiry. But now certain philosophers — in rather different ways, for example, Paul Ricoeur and Stephen Toulmin[27] — are bringing scientific methodology under the rubric of "hermeneutics," a label that, in spite of its current usage as referring broadly to the activity of deriving the meaning inherent in texts, still carries some connotation of its initial reference to biblical exegesis. It is, of course, the problematizing of the old scientific method, supposedly consisting of hypothesis and proof, that allows that method to reappear as a hermeneutic schema characterized by notions of guesswork and validation, or noninvalidation. As Toulmin says, "Once we recognize that the natural sciences too are in the business of construing reality, we shall be better able to preserve the central insights of the hermeneutic method, without succumbing

to the misleading implications of its rhetorical misuse."[28] In such a view, both science and the humanities are engaged in the activity of interpretation, or the practice of hermeneutics. Indeed, philosopher Gyorgy Markus presents the beginning of a detailed humanistic analysis of scientific discourse in a paper provocatively titled "Why Is There No Hermeneutics of Natural Sciences? Some Preliminary Theses."[29]

If scientific "truths" are always "framework dependent," as claimed by the movement initiated by Thomas Kuhn and Paul Feyerabend, then the framework, or paradigm, is the enabling structure that determines what the scientific facts can be taken to mean, and indeed how they can be determined. Between competing paradigms there is no commensurability; without some overarching paradigm to give a context for comparison, events construed within each paradigm must make their own kind of sense. In the most extreme version of framework-dependence, no one framework can be preferred over another, and the movement of science from one paradigm to another represents merely change, not progress.

In Kuhnian terms, that movement from paradigm to paradigm is construed as a series of scientific revolutions, dramatic shifts in scientific thought and practice as scientists switch their allegiance. In this view, the long, steady march of science, with the past as a series of ever-closer approximations to the present, is simply an illusion. The periodic paradigmatic revolutions, the wrenching frameshifts, become inapparent, however, as science surveys its past, simply because the past is always seen from, and rewritten within, the prevailing paradigm. The "past" is the past the paradigm needs in order to account for its own present.

The Kuhnian conception of scientific revolutions has been extremely popular with literary critics because its picture of periodic scientific change so much resembles the conventional view of literary change: broad literary periods each governed by a single, conventional sensibility and bordered by abrupt changes of convention—the Augustan Age, say, terminated by the Romantic Rebellion. Such comparability suggests at once a kinship in the two modes of discourse, one hardly possible under the traditional view of slow and steady scientific progress. To be sure, as every student of literature knows, the more closely one examines the literary periods, the more the distinctions between them blur and the more artificial the boundaries seem. But so too has the post-Kuhnian history of science found the original notion of abrupt revolutionary paradigm shift something of an oversimplification. In any case, however, the historical periodicities of the two bodies of discourse emerge as not totally dissimilar and certainly not

the marked differentiating feature the traditional view would insist them to be.[30]

5

Science, in addition, is now seen from certain perspectives as a collective affair. Rather than proceeding by the accumulation of singular discoveries of basic truths by isolated individuals, science is, in this view, an ongoing series of negotiations among groups of scientists variously competing and cooperating, seeking to arrive at views that will be acceptable to as much of the community as possible. As physicist (and philosopher) John Ziman says, "*The goal of science is a consensus of rational opinion over the widest possible field*."[31]

Determining the ways in which such consensus views are arrived at is a goal of the new sociology of science. The traditional sociology of science, begun in the 1930s by Robert Merton and his school, concerned itself with the organizational behavior of scientists and the impact of external social structures on the scientific enterprise.[32] The Mertonians deliberately excluded from their purview the substantive content of science—that is, they studied how scientists work together and how they are influenced by society at large, but not how these factors affect their accumulation of scientific "knowledge." It is precisely to this area that the newer sociologists of science—led by David Bloor, Barry Barnes, and others—have turned.[33]

Thus, these new sociologists argue that scientific "knowledge" is knowledge not because it correctly relates the true state of the natural world but because it has been accepted as knowledge by the working body of scientists involved. The causes of scientific knowledge, then, are to be sought in the social relations by which scientists achieve consensus rather than in the physical constraints of the external world. In achieving consensus scientists perforce accept some beliefs as true and reject others as false, and it may well be, the new sociologists hold, that the reasons they do so are themselves largely social. Perhaps for strategic reasons—it being less challenging to traditional views of what constitutes scientific knowledge—the new sociologists early on sought to examine the social causes that compel holders of "false" or "marginal" beliefs to maintain them. Thus there were sociological studies of such phenomena as ESP, UFOS, acupuncture, and so on.[34] But the "strong programme" of the new sociology, as laid out by Bloor, is symmetrical: it looks not only for the social causes of scientific beliefs but for the same kinds of causes for "true" and "false" beliefs.[35]

Indeed, a number of ethnographic studies of laboratory practice have now appeared, testifying to the growing interest in examining the social engagements of scientists as they go about their work of constituting scientific knowledge.[36] Thus, in *Laboratory Life: The Social Construction of Scientific Facts*, Bruno Latour and Steve Woolgar present an "anthropological" investigation of a neuro-endocrinology laboratory, which seeks to demonstrate how conditional and qualified observational statements—statements whose phraseology circumscribes their origin—eventually, through social processes, become taken as statements of unqualified scientific fact.[37] *Laboratory Life* is a real-time investigation, but the new sociological approach is applied to historical subjects as well. For example, *Leviathan and the Air-Pump*, by Steven Shapin and Simon Schaffer, examines the controversy between Robert Boyle and Thomas Hobbes over Boyle's air-pump experiments and their interpretation.[38] The study situates the dispute in the context of Restoration society and presents social and political reasons for the respective positions.

The paradigm-relativist and constructivist views of scientific knowledge on which the new sociology is based are not, needless to say, universally accepted. They run, for example, quite contrary to the instinctive thinking of most working scientists. And a number of philosophers of science hold, if not with the old positivism, at least with a new philosophical realism. Such philosophers—Richard Boyd, for example[39]—argue that scientific truths can be after all true (without quotation marks) and true of the real world (again, without qualification). Interestingly enough, the realist position has been used to "defend" literary criticism itself from the uncertainty and deconstruction introduced by the poststructuralists.[40] Although the realist position accords well with the operational thinking of most scientists, it has not won over the constructivists, who continue to insist that scientific knowledge is made, not discovered.[41]

The paradigm-relativist and constructivist positions cast scientific discourse in the countertraditional mold. Paradigm-relativism holds that the discourse within a paradigm is essentially autonomous and the choice between competing paradigms is a matter not of logic, but of rhetoric—though historians and philosophers may avoid the latter term. Thus, since considerations of scientific fact do not permit choices between paradigms, shifts in paradigmatic allegiance come about only when the discourse of one paradigm becomes more convincing to scientists than the discourse of another. Similarly when scientific facts are constructed, the constructivist holds, it is because the relevant scientists have found the discursive state-

ments sufficiently convincing to be accorded the status of fact. In this view, the discourse does not record preexisting facts; rather, the discourse determines what become the facts.

If, then, scientific discourse is an organ of persuasion, like literature, and is an instrument for the construction of fact, as literature is of fiction, is there not a kinship between the two bodies of discourse? Presumably. As Latour and Woolgar say in a final footnote to *Laboratory Life*, "Our discussion is a first tentative step towards making clear the link between science and literature."[42] To a degree, Latour and Woolgar and the other new sociologists are joined, perhaps somewhat anticipated, in their "first tentative step" by certain literary critics, a number of historians of science, and some scientists themselves, all of whom speak not to the differences of science and literature but to their similarities.

And this leads us to the final question this chapter will address and the central topic of this book: what, precisely, are the similarities and the differences in the discourses of literature and science?

6

In the traditional comparisons of literary and scientific language cited earlier, there are not only assertions that the two bodies of discourse differ but indications as to how they differ. Thus, implicit in the discussion of Wellek and Warren, for instance, is what was for some time a standard formulation of the suitable perspectives from which one might view a literary text. That is to say that any literary argument could be—and at various times all literary arguments have been—validly based on one or more of these relationships of the text: (1) with the world it seeks to represent, (2) with the author whose views and feelings it aims to express, (3) with the reader whose acceptance it tries to win, and (4) with its own inner being, whose form it will embody.[43] Equally implicit in this traditional argument is the view that the scientific language, unlike the literary, is of significance only with respect to its subject matter. Its purpose is merely to convey that subject matter as clearly and simply as possible, and it is to be judged solely by how well it does so. Any trace of the author is considered accidental; any influence on readers, other than influence on their knowledge, is thought irrelevant; any self-awareness of the text, as text, is unthinkable.

Recent literary theory deemphasizes several of the classic perspectives and adds several new ones. Thus, it is argued that the literary work may function (some would say, *must* function) in an extraliterary milieu, namely

in the political, social, and economic realm; it is, in this view, the milieu, through the author, that writes the text. Alternatively, another contemporary judgment asserts that the text, as multiple layers of signifying codes, serves—if I may so simply sum up a complex series of arguments—a constituting function. Thus, the codes of the text "write" the author (and not the reverse); the codes create the reader (and not the reverse); indeed, the codes construct the world the text purports to describe.

One might well anticipate that, since traditional literary criticism views literature variously while maintaining its singular view of the scientific text as "merely" representational, these newer literary critical modes too mark off the literary domain from the scientific—that is, extend neither social determinism nor textual constructivity to the discourse of science. And surely there are those who would hold such traditional views. To anticipate our argument, however, these contemporary critical modes are generally more congenial to the countertraditionalists and play an important role in the countertraditional argument that literary and scientific texts resemble each other more than they differ.

7

Traditional scientists are likely to agree with their literary critical counterparts that their discourse "represents" and that it bears none of the other hallmarks variously ascribed to literature. As Barthes has suggested, they regularly consider their writings as separate and distinct from their real, scientific work—making observations of and performing experiments with the real world and, on the basis of those observations and experiments, drawing inferences about the nature of that world. That the two kinds of activity are conceived to be separate and distinct can easily be seen. How else is one to interpret Darwin's often-cited remark, "A naturalist's life would be a happy one if he had only to observe, and never to write"?[44] A recent technical writing text is explicit on the same point: "Actually, they [scientists or engineers] are handed two very different problems when they are given a technical assignment and then asked to report on it. First, they must do the assigned technical work, make the study, gather the information, determine what it means. Next, they must report on that work to others."[45]

Scientists traditionally perceive the relation between what they do and what they write as "representation" or "mirroring," thereby agreeing with

the literary critical characterization of their discourse. It is not difficult to find precise usage that supports this assertion. Thus one text on the writing of engineering reports makes the following comment, presumably as applicable to scientific as to engineering discourse: "In any report of engineering development the writing *reflects* the work itself" (emphasis added).[46] And an instructional volume for those writing papers for any professional journal says, "Organization in scientific writing is frequently a *reflection* of a specific scientific method" (emphasis added).[47]

Do scientists in the traditional camp, however, share the literary critical view that their work is devoid of those other qualities (expressivity, evocativity, and so on) variously assigned to the literary text? To begin with, such scientists surely do not believe that their writing is, like the poets', expressive. Of all the shibboleths that science promotes about its own enterprise, the most pervasive is this: that science is objective and impersonal. Indeed, we are repeatedly told, it is only through its objectivity, its impersonality, that science arrives at its ultimate truths. There is also a consensus among scientists that the objectivity of science must be duly reflected in the corollary objectivity of its discourse. As the Fiesers say in their *Style Guide for Chemists*: "We do not want our personality to emerge in our writing and divert attention from the story we are trying to tell. . . . Good writing, for us, is writing that is readable, clear, and interesting. We can do without style; indeed characteristics identifying a particular author are liable to be not marks of style but violations of principles of good usage."[48] As Albert Einstein noted in the introduction to his layman's account of relativity, *Relativity: The Special and the General Theory*, he "adhered scrupulously to the precept of that brilliant theoretical physicist L. Boltzmann, according to whom matters of elegance ought to be left to the tailor and to the cobbler."[49]

Many would go beyond the mere assertion of good taste or appropriateness in the choice of an objective voice for scientific discourse. For them the public verifiability of scientific findings is an essential part of the scientific method, and public verifiability demands a public, an objective, language. Linguist Leonard Bloomfield, in his *Linguistic Aspects of Science*, explains: "Science deals with the phases of response that are alike for all normal persons. Its observations and predictions can be tested by anyone. . . . Unique personal or communal behavior figures in science as an object, which may be observed like any other; but it does not figure as a part of scientific procedure."[50] Whether or not all traditional scientists to-

day would endorse this view of precisely why their language is the way it is, most would almost surely agree that it is, as Bloomfield describes it, a language devoid of "private connotations."

It is also a language, they would agree, that eschews rhetoric. This idea is venerable. Thus, Robert Hooke, from his draft preamble to the statutes of the Royal Society: "The business of the Royal Society is: To improve the knowledge of natural things ... (not meddling with Divinity, Metaphysics, Morals, Politics, Grammar, Rhetoric, or Logicks)."[51] Nor is this simply an old-fashioned attitude. Gunther Stent, a contemporary molecular biologist turned historian of science, accepts the traditional split between the objective language of science and the affective language of art. Thus, Stent says, science deals with "the outer, objective world of physical phenomena. Scientific statements therefore pertain mainly to relations between or among public events." Artistic statements, on the other hand, "pertain mainly to private events of affective significance."[52] The Bloomfieldian view of scientific discourse is that, just as the scientist-writer tries not to express individual, subjective, and affective material, the scientist-reader learns not to respond to or to ignore any such material that is unwittingly expressed. "As, by convention and training, the participants in scientific discourse learn consistently to ignore all private factors of meaning, the lexical, grammatical, and stylistic features of their informal discourse become indifferent: each scientist responds to each discourse only with the relevant operations or their linguistic substitutes."[53] Scientific language, in short, insulates itself from the provocation of any response other than operational understanding.

With respect to traditional scientists' view of the "artful" character of their writings, it probably coincides with the judgment about scientific documents given by the traditional critic, namely that they have no intrinsic interest as writing, that they merely serve — adequately enough, perhaps — their utilitarian purpose of having their scientific say. Indicative of this judgment is the phrase "Reconstruction of an Investigation," employed as a chapter title in one technical writing text to describe the report-writing process.[54] At the same time this view is entirely consonant with the scientific views that hold that the scientific work is merely a representation, that it is not expressive, that it has no rhetorical effect. Thus the scientist's paper is a kind of artless setting forth of what has been done, a transcript, a recording, a "mere" representation, writing that serves no purpose other than to transmit clearly whatever view lies behind it. Ideally, it is itself unseen, unobserved, undetected — certainly un-"interesting."

A central tenet of the "mystique" of science is that science is by virtue of its method insulated from any social, political, or economic pressures. Science, it is said, is dedicated to discovering the truth undeterred by extrascientific concerns; it is, in its essence, socially disinterested, ethically neutral, morally uncommitted, and pragmatically indifferent.

The scientific method itself is what is said to isolate, objectify, and neutralize science — free it from the curse of the human, individually or collectively. To make this possible, the scientist, or the apologist for science, often will divide the enterprise of the scientist into two portions, the phase of generation, in which the ideas are born, and the phase of justification, or verification, in which they are tested.[55] The scientific idea may come from anywhere — myth, ideology, the unconscious — and one need not be concerned, because the scientist at once moves on to the process of verification. Now the contaminated idea is tested in the crucible of the scientific method. The fire of scientific scrutiny burns away from the idea — the hypothesis or the theory — the stain of its origin. In this way, one can acknowledge the humanity of the scientist and yet maintain the ultimate objectivity of the endeavor.

In a similar view, the traditional scientist will insist on the freedom of science from contamination by the ends to which it is employed. Science may become a social tool, may do the world's work, but it remains untainted by that use. Science, in this official view, is an instrument; its blade can be used for life-saving surgery or human sacrifice and will wipe as clean in either case. One can acknowledge the misuse of science, its employment in unsavory ways (as in the Nazi concentration camps), while maintaining that science itself remains uncorrupted by such (mis)employment. Indeed, the traditional view will hold, science cannot long be misapplied because its method carries the mechanism to prevent such misuse, namely its own need for freedom of inquiry. The all-important verification procedures of science must be free to operate unchecked or the whole enterprise will cease to work.

Similarly, to much of the world of science, any reference to the "textuality" of its substance, any assertion that its language is operative in shaping its thought, in constituting its world, would be simply incomprehensible. To traditional scientists, the notion that their language is itself operative — a force, an instrumentality, that shapes the course of science — will, simply, not be believed. Such a scientist is, without consciously directing attention to the matter, convinced that scientific language is itself, as Barthes has described it, "transparent," the invisible, intangible, im-

potent carrier of the scientific thought. What matters is the substance of scientific thinking, not its formulation.

Traditionalist scientists, then, agree with their counterparts in the literary world not only in their judgment as to the dichotomy of their respective discourses—two cultures, two languages—but also in their delineation of scientific language as essentially representational and devoid of those other qualities—expressivity, affectivity, artfulness, social artifactuality, textual constitutivity—variously thought to give literary language its literariness.

8

The countertradition, needless to say, makes its own very different comparison of the respective discourses of literature and science. Neither within the scientific camp nor within literary criticism have the counterculturalists systematically developed modes of comparison of the two forms—a gap this book is intended in part to fill. But one can certainly make some observations as to the thinking that lies behind the various countertraditional critiques.

Within science, even the countertraditionalists will probably not trouble themselves to challenge the traditional view that scientific discourse is in considerable measure *representational*; after all, even nontraditional science is about something. Nor are countertraditional scientists likely to insist (contra tradition) that their discourse is *expressive*; traditional insistence on the objectivity of scientific discourse is very difficult to shake off. But the countertraditional scientist, as noted, will see a degree of *evocation* in scientific discourse and will not hesitate to acknowledge some rhetorical effect, if not rhetorical intent. Even the Fiesers advise their fellow chemists on how to "ease the burden of the reader." Furthermore, such scientists will concede that the scientific document is something of a construct—"a man- or woman-made text," as Roald Hoffmann says—not perhaps an art object, like a poem, but nonetheless something that is crafted and shaped.

Although modern science is a collective affair, and working scientists daily immerse themselves in the activities of their scientific culture—itself embedded in the social structures of the world at large—nonetheless, like most of us engaged in social practices, scientists are likely not to perceive the social constraints on their thought, but to see them simply as part and

parcel of the content of the thought itself. Thus, even countertraditional scientists are not much given to pressing the case that their scientific discourse is *socially* shaped, let alone socially determined. It is true that ethnographers, as noted above, have been forced to consider their own subjective cultural frames as shaping their perceptions of the object cultures they encounter. And historians of science have for some time viewed social forces (in this case, largely external social forces) as shaping the scientific enterprise, Marxist critiques, in particular, having a quite extended history.[56] Recently, countercultural historian Robert M. Young, in arguing against the conception of separate "internalist" and "externalist" histories of science, has emphasized the mutual exchanges of influence between science and the social, political, and economic realm.[57] But it is largely the new sociologists of science who have made the countertraditional case that the scientific document is, in effect, a social artifact shaped by and functioning in the social milieu—the milieu of science and the milieu of the surrounding world.

Finally, countertraditional science, most notably quantum mechanics, in largely removing the privileged status of the scientist observer and forcing a consideration of the observer-observed as a single system, which must be judged in its entirety, has made the scientists' activities, as reported in their papers, in considerable measure *constitutive* of their results. In the quantum mechanical field, at least, scientists have been forced to concede that much of what they "find" they have themselves contrived or collaborated in. For many contemporary historians and philosophers of science, too—most notably the paradigm-relativists and the constructivists—the subject matter of any body of science is largely determined by the framework in which that science is conceived. Even these arch-countertraditionalists among the scientists and the historians of science, however, are unlikely to focus on the language formulations of science as themselves being determinative of scientific knowledge. Thus, the countertradition of science takes a step, but only a step, along the pathway from the traditional denial of the textually determinative character of scientific discourse. In sum, then, countertraditional science and historical, philosophical, and sociological students of science would modify the traditional view of scientific discourse as sharply marked off from literary discourse (in all but its representational aspects), particularly in emphasizing its rhetorical and social aspects and in recognizing, to a degree at least, its character as *text*, and indeed as constitutive text.

●

Within literary studies, the countertraditional view of the discourses of science and literature has in recent years made substantial headway, though it has yet to lay out a fully formulated comparison of the two modes. For long a minor, barely tolerated sidebar to "serious" literary study, the field of literature and science has in the decade of the 1980s virtually exploded. Testimony to the newfound popularity of this area was the formation in 1985 of the Society for Literature and Science, along with the growing number of conferences and publications dedicated to the field and to specific subsets within it.[58]

For much of its existence, this field has been dichotomized into studies of the influence of science on literary texts and, less common, literary studies of scientific texts. Much of the recent, impressive growth in the field has been in the latter area, and indeed, perhaps the most significant movement has been toward the analysis of nominally heterogeneous bodies of texts—texts whose usual attributions, "literary," "scientific," "technological," "political," seem finally irrelevant to their reading as documents growing out of a common mode of thought, designated often by Foucault's term "discursive formation."

Thorough reviews of these various bodies of work have recently appeared, and only a few comments need be made here.[59] Much of the literary study of the scientific literature has focused on the work of individual scientists, Darwin especially.[60] The first sustained close reading of Darwin was Stanley Edgar Hyman's *Tangled Bank: Darwin, Marx, Frazer and Freud as Imaginative Writers* in 1962.[61] And the most recent detailed examinations of his writings were Gillian Beer's *Darwin's Plots* in 1983 and George Levine's *Darwin and the Novelists* in 1988.[62] There are any number of possible reasons for the interest: Darwin's qualities as a writer, the accessibility of the major texts, and the importance of the Darwinian revolution in Victorian thought (there was hardly a Victorian writer who escaped its influence). But literary critics have scrutinized the writings of other scientists, too. Thus, another of Hyman's subjects, Freud, has attracted his share of attention, the most recent study being Patrick Mahony's *Freud as a Writer* in 1987.[63]

It is perhaps not surprising that in applying literary critical methods of scientific texts, many investigators should have followed literary critical practice and concentrated on individual works and authors. Common, too, are period studies like those of the literary world—for example, *Victorian*

Science and Victorian Values.[64] But also seen are generic and thematic investigations; thus, several scholars have analyzed the genre of the scientific paper.[65]

Thematic analysis of scientific discourse is most associated with the work of Gerald Holton, although the study of thematic usage that transcends traditional generic boundaries dates back to the 1930s and the history-of-ideas movement.[66] Its modern rebirth is largely the work of Michel Foucault,[67] with French historian of science Michel Serres contributing to the movement. Serres reads paintings, poems, novels, and fables, as well as scientific texts, in pursuit of patterns, themes, and metaphors that lie within thought and determine its shape.[68] Indeed, thematic analysis has its Anglo-American exponents as well.[69]

Critical modes that draw on disciplines outside the literary world, so-called extrinsic critical methods (Marxism, Freudianism, and the like) also have their adherents among the literary readers of scientific texts. Thus, there have been, for example, a number of Freudian readings of Darwin,[70] and, most recently, feminists have turned their scrutiny on the texts of science.[71]

Implicit, though not often made explicit, in these literary studies of scientific texts are certain assumptions about the general character of scientific discourse vis-à-vis literature. Clearly, these literary countertraditionalists, like their scientific counterparts, do not endorse the view of scientific discourse as pure representation. Nor do they argue to any extent for its expressivity. They, too, accept the evocational element in scientific discourse, as the many rhetorical studies of scientific texts demonstrate; Mahony's analysis of Freud's writing, for example, is in considerable measure rhetorical. Further, Hyman's New Critical studies of Darwin suggest that the art-object view of discourse is as applicable to science as it is to literature. The extrinsic critical readings of scientific texts, such as the Marxist and feminist ones, are quite indicative that such texts can be seen to bear the marks of their social determination. Indeed, period studies, such as those of Victorian science, often show the social influence on the scientific discourse of the time. Finally, those discourse analyses in the Foucaultian vein are testament to the reading of scientific texts as constitutive of the discursive worlds they bring into being. In these various respects, then, the countertraditional literary movement, much like that within science and its corollary disciplines, distances itself from the traditional view of the scientific text as devoid entirely of literary features. A fuller, more sustained development of these ideas is the aim of this book.

10

To proceed, we shall take up each of the six perspectives noted above as adopted at various times and under various circumstances for the reading of literary texts, investigating in turn the utility of each for the reading of scientific texts. (Even those approaches not currently in vogue in literary circles will prove relevant to the project.) In the argument, we shall adopt the convenient fiction that six discrete theories exist, each making its own competing claim for validity in the reading of the text: (1) representation theory, which sees the literary work as essentially a representation of the real world; (2) expression theory, which views that work as an expression of its author's thoughts and feelings; (3) evocation theory, which values it as an evoker of response from its readers; (4) art-object theory, which judges the work as an objet d'art, interesting in its purely formal properties; (5) artifact theory, which situates the work in its social milieu; and (6) instrumentality theory, which places the work among the signifying systems that organize, structure, indeed constitute, the world. Successive chapters will, in turn, briefly examine each theory for its general validity for scientific texts and with reference to specific texts seek to determine the value of the theory as an entrée to the fuller reading of the texts in question.

To anticipate the outcome, we shall see that the traditional judgment should be essentially reversed: that though scientific and literary discourses both represent, they do so in rather different ways, and that both bodies of discourse are approachable by methods suggested by other theories. Thus, we shall find, nothing in the literary critical armamentarium is per se to be ruled off-limits in the examination of scientific texts.

Indeed, each of the six theories will reveal something of importance about the reading of scientific texts: something scientists need to know if science is to proceed with full awareness of its own methodology; something the world of literary criticism needs to know if it is to understand fully its own modes of reading and their range of applicability; something all who dwell in the world science has made need to know if they are to understand that world and how it works. If there are two cultures, they interpenetrate. And if the world is to appreciate what the scientific culture is saying, and what it is *doing* by saying, it must employ the methods of the literary culture to discover how it is saying, and doing, it.

The Problematics of Representation

LTHOUGH TRADITIONAL SCIENTISTS ARE LIKELY NOT TO DEMUR AT THE suggestion that their writing is in some sense representation, they are less prone than the literary critic to refer to that representation as imitation (the famed *mimesis* of Plato and Aristotle). This may merely be because few scientists are raised on Aristotle's *Poetics*. More important, however, it suggests that scientists do not think that the markedly illusionistic effects commonly attributed to literary representation are important in their kind of discourse. Most people would probably agree that there is little scientific discourse that creates the kind of felt presence traditionally associated with literary representation; one would never expect the botanist's daffodils to "flutter and dance" before our eyes as Wordsworth's do. Scientists, to be sure, are expected to describe their experiments in enough detail to permit their replication by any other scientist similarly trained, but their descriptions are not required to create the illusion that the described events occur as real events before one's eyes, any more than the cook's recipes do.

Scientists, above all, hold that their representations are not fictive, as literary representations may frankly be; they report what, in fact, the scientists believe really to have occurred. At the same time, however, the scientists' representations need not be faithful to life or our expectations of life, as the classical view of mimesis holds that literature must be "probable," as Aristotle decrees,[1] because the scientists' events purport to be true. The most unlikely

or unexpected of scientific results may be thought to carry with them the stamp of truth, so that they need not be made to seem likely, just as they need not be made illusionistically real. Sir Alexander Fleming did not need to conceal his surprise that his bacterial cultures had died in the vicinity of *Penicillium* molds, nor did Otto Hahn and Lise Meitner seek to make "probable" the finding of light atoms among the products of uranium decay.

Yet, just as the classical and the neoclassical critics claim literary representation to be *generally* true, to assert a widely applicable truth,[2] so scientists, they would hold, aim ultimately at general laws. A scientist who does not uncover laws of general validity is not functioning as a true scientist. When scientists, however, arrive at general laws, they, unlike the poet, enunciate them. The job of the poet is to exemplify truths, not to formulate them in words. Poets clothe their insights in actions that show them to us; scientists give us their insights verbatim. Whereas Newton states his laws of motion, Shakespeare portrays his truths of the human heart by particularizing them. There are, indeed, literary traditions in which the authorial personae speak to us, direct our thinking, even dictate our judgments, but these must themselves derive from the experience presented, and there is clearly a tendency to favor—Jamesian realism indeed demands—the suppression of such overt instruction. "Showing," in the words of the English teachers, is preferred to "telling."

Further, the neoclassical view of literary representation typically holds that what is portrayed is to be shown as in some way better than what is real. There are suggestions of this even in Aristotle,[3] but it is the neoclassical critic who gives the idea full voice. Thus, Sir Philip Sidney asserts: Nature's "world is brazen; the poets only deliver a golden."[4] Traditional scientists, in their turn, would not think of improving on nature in what they represent; their only aim, they aver, is to find and depict what is really in nature. This view, to be sure, we must not let stand unchallenged, even provisionally, for every effort the scientist makes, as we will see, is to "improve" on nature: the curves have been artificially smoothed, the equations are merely approximate, and the laws hold only in some ideal Newtonian universe.

Traditional scientists, finally, do not trouble themselves to be "realistic," as literary realism proclaimed literature must be. Or, rather, it does not occur to them they can be anything other than realistic; they believe that they are setting down, representing, what really happened, and that that representation must be, on the face of it, realistic. Nor do they detect

external conventions that might determine their view of how reality is to be experienced, like those that we have now come to believe affect the artist's view of reality. In this respect, the scientist joins with the artist in being largely unconscious of the social conventions that so heavily determine their respective views of reality. As to changing artistic conventions, however, here the artist and the scientist are likely to part company. Whereas the artist is likely to be aware of altering the conventions of the craft—or to feel that he or she is abandoning conventions of representation altogether—in the name of achieving greater fidelity to "nature" or to "truth,"[5] the scientist will likely feel no such impulse. To be sure, many scientists may believe that the "pictures" they paint of nature are a more faithful likeness than those of their predecessors, but only by virtue of the efficacy of their science, not because of the skill of their representation.

The scientist deals, science believes, with "eternal" truths. The discourse of science, to the scientist who holds to a traditionalist view, is a cumulative, ever-growing store of knowledge, not quite unchanging perhaps, but approaching asymptotically to the absolute truth. One well-known historian of science presents the traditional view of the working of science as follows: "The examination of records of observations by trained minds leads to classification; from classifications general rules or 'laws' are deduced; these laws may be applied to further observations; failures in correspondence between new observations and accepted laws may result in alterations of the laws; and these alterations lead to yet further observations; and so on. This is usually held to constitute the 'method' of science."[6] In this view, scientific representation can be only true and universal. Even when "records of observations by trained minds" give laws that need ultimately to be altered, the "records of observations" still stand; the altered laws must account for them as well as for the "new observations." Viewed thus, the discourse of science displays no counterpart of the changing conventions, the shifting notions of what constitutes realistic representation, that give the literary world its look of undergoing periodic waves of altered sensibility.

As to literature, it must be noted that representation theory is not a force in literary criticism today. The theory that played so leading a role in classical and neoclassical criticism, that formed the very credo of realism, has had but an exceedingly minor role to play in the theater of criticism since the coming of modernism and the New Criticism.[7] And, perhaps not coincidentally, epistemology, as Richard Rorty points out, has now abandoned its own version of representation theory—namely, that the mind